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Basin Outlook Reports

and

Federal - State - Private

Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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Washington Water Supply Outlook

February 2002

General Outlook

January brought near to slightly above average climate conditions throughout the state of Washington. Eastside temperatures were 3-6 degrees above normal. Precipitation ranged from well above to well below average at individual stations, however basin wide percentages remained near to above average. Western Washington, on the other hand, received above average precipitation at almost all locations. Near average temperatures produced several days of snow in the lowlands of Puget Sound last month. Long-lead (30-90 day) forecasts indicate a possibility of continued above average temperatures in the Pacific Northwest. Precipitation amounts have been difficult to predict with any confidence and thus indicate a continuation of the patterns we have been experiencing.

Snowpack

The February 1 statewide SNOTEL readings were above average at 124%. The Entiat River Basin snow surveys reported the lowest readings at 79% of average. Readings in the Tolt River Basin reported the highest at 187% of average. Westside averages from SNOTEL, and February 1 snow surveys, included the North Puget Sound river basins with 143% of average, the Central Puget river basins with 153%, and the Lewis-Cowlitz basins with 137% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 110% and the Wenatchee area with 105%. Snowpack in the Spokane River Basin was at 125% and the Walla Walla River Basin had 120% of average. Maximum snow water content in Washington was at Alpine Meadows SNOTEL in the Central Cascade Mountains, with water content of 59.3 inches. This site would normally have 29.2 inches of water content on February 1. The highest average in the state was Alpine Meadows SNOTEL in the Tolt River Basin with 203% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	210	125
Newman Lake	199	129
Pend Oreille	168	93
Okanogan	182	103
Methow	217	101
Similkameen	128	81
Wenatchee	229	131
Chelan	250	117
Upper Yakima	187	106
Lower Yakima	221	117
Ahtanum Creek	213	112
Walla Walla	191	120
Lower Snake	186	118
Cowlitz	217	121
Lewis	237	153
White	219	118
Green	248	114
Puyallup	222	118
Cedar	241	147
Snoqualmie	225	131
Skykomish	230	139
Skagit	247	112
Baker	329	157
Nooksack	226	161
Olympic Peninsula	236	116

Precipitation

During the month of January, the National Weather Service and Natural Resources Conservation Service climate stations reported varying precipitation totals throughout Washington river basins. The highest percent of average in the state was at Potato Hill SNOTEL which reported 223% of average for a total of 23.5 inches. The average for this site is 10.53 inches for January. The greatest monthly increase in the state was reported at June Lake SNOTEL with a January accumulation of 39.4 inches, 150% of average for this site. Basin averages for the water year are all near to above average with the Olympics reporting the highest at 134% and the White-Green-Puyallup river basins with the lowest at 108% of average.

RIVER BASIN	JANUARY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	157	125
Colville-Pend Oreille	138	130
Okanogan-Methow	91	111
Wenatchee-Chelan	108	111
Upper Yakima	128	113
Lower Yakima	112	116
Walla Walla	109	114
Lower Snake	129	120
Cowlitz-Lewis	136	119
White-Green-Puyallup	112	108
Central Puget Sound	143	114
North Puget Sound	141	119
Olympic Peninsula	130	134

Reservoir

Seasonal reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation and flood control. Reservoir storage in the Yakima Basin was 328,000-acre feet, 74% of average for the Upper Reaches and 103,000-acre feet, 85% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 39% of average for February 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 115,000 acre feet, 99% of average and 48% of capacity; Chelan Lake, 336,000 acre feet, 106% of average and 50% of capacity; and the Skagit River reservoirs at 104% of average and 74% of capacity.

BASIN	PERCENT OF CAPACITY	CURRENT STORAGE AS PERCENT OF AVERAGE
Spokane	48	99
Colville-Pend Oreille	75	92
Okanogan-Methow	27	39
Wenatchee-Chelan	50	106
Upper Yakima	39	74
Lower Yakima	44	85
North Puget Sound	74	104

Streamflow

February forecasts vary from 134% of average for the Cedar River at Cedar Falls to 86% of average for both the Similkameen and Okanogan rivers. April-September forecasts for some Western Washington streams include the Rex River near Cedar Falls, 111%; Green River, 104%; and Skagit River, 104%. Some Eastern Washington streams include the Yakima River near Parker, 104%; Wenatchee River at Plain, 100%; and Spokane River near Post Falls, 120%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS.

Eastern Washington January streamflows were, for the most part, above average due to warmer temperatures and above average precipitation. West-side streamflows were also above normal, including some localized flooding, due to above average precipitation, during the month. The Priest River near the town of Bumping River near Nile had the highest reported flows with 166% of average. The Snake River below Ice Harbor Dam with 67% of average, was the lowest in the state. Other streamflows were the following percentage of average: the Cowlitz, 122%; the Spokane at Spokane, 115%; the Columbia below Rock Island Dam, 111%; and the Cle Elum near Roslyn, 140%.

BASIN

PERCENT OF AVERAGE MOST PROBABLE FORECAST (50 PERCENT CHANCE OF EXCEEDENCE)

Spokane	118-120
Colville-Pend Oreille	91-108
Okanogan-Methow	86-107
Wenatchee-Chelan	96-101
Upper Yakima	99-110
Lower Yakima	98-112
Walla Walla	109-115
Lower Snake	97-113
Cowlitz-Lewis	95-112
White-Green-Puyallup	99-104
Central Puget Sound	100-134
North Puget Sound	101-111
Olympic Peninsula	107-109

STREAM

PERCENT OF AVERAGE JANUARY STREAMFLOWS

Pend Oreille Below Box Canyon	101
Kettle at Laurier	134
Columbia at Birchbank	102
Spokane at Long Lake	107
Similkameen at Nighthawk	118
Okanogan at Tonasket	111
Methow at Pateros	89
Chelan at Chelan	113
Wenatchee at Pashastin	141
Yakima at Cle Elum	122
Yakima at Parker	122
Naches at Naches	149
Grande Ronde at Troy	67
Snake below Lower Granite Dam	67
SF Walla Walla near Milton Freewater	97
Columbia River at The Dalles	85
Lewis at Ariel	119
Cowlitz below Mayfield Dam	122
Skagit at Concrete	153

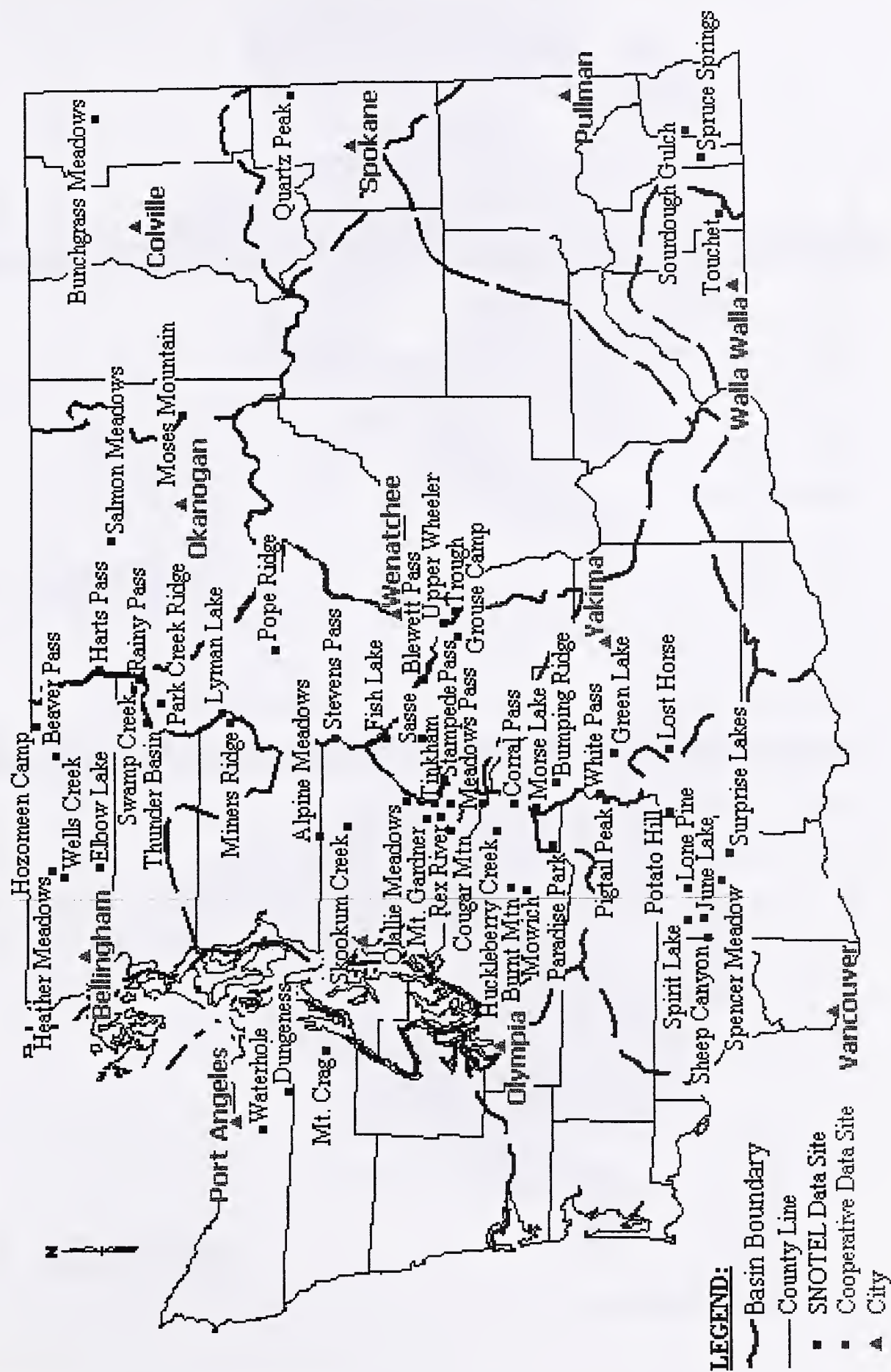
For more information contact your local Natural Resources Conservation Service office.

BASIN SUMMARY OF SNOW COURSE DATA

FEBRUARY 2002

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
AHTANUM R.S.	3100	1/31/02	18	5.7	2.6	7.1	LUBRECHT HYDROPLAT	4200	1/30/02	19	3.1	3.1	4.2
ALPINE MEADOWS SNTL	3500	2/01/02	---	59.3	20.4	29.2	LUBRECHT SNOTEL	4680	2/01/02	---	3.5	3.3	4.2
ASHLEY DIVIDE	4820	1/29/02	18	4.9	3.4	5.1	LYMAN LAKE SNOTEL	5900	2/01/02	---	49.2	19.9	43.4
BADGER PASS SNOTEL	6900	2/01/02	---	21.6	9.1	22.3	LYNN LAKE	4000	1/29/02	68	20.8	5.8	14.5
BARKER LAKES SNOTEL	8250	2/01/02	---	5.8	6.8	9.2	MARIAS PASS	5250	1/31/02	40	10.6	6.7	11.7
BARNES CREEK CAN.	5320	2/04/02	50	13.8	8.8	14.4	MCCULLOCH CAN.	4200	1/31/02	24	4.7	3.0	4.9
BASIN CREEK SNOTEL	7180	2/01/02	---	3.5	4.6	4.9	MEADOWS CABIN	1900	2/01/02	24	5.0E	2.1	5.0
BASSOO PEAK	5150	1/31/02	33	7.8	--	--	MEADOWS PASS SNOTEL	3240	2/01/02	---	29.7	13.2	19.1
BEAVER CREEK TRAIL	2200	1/30/02	44	11.0	5.8	10.3	MERRITT	2140	1/31/02	42	10.8	8.3	11.7
BEAVER PASS	3680	1/31/02	72	23.4	7.7	19.3	MICA CREEK SNOTEL	4750	2/01/02	---	22.3	13.5	18.3
BERNE-MILL CREEK (d)	3170	1/31/02	75	21.3	14.3	20.2	MISSEZULA MTN CAN.	5080	1/27/02	24	5.4	4.3	6.5
BIG WHITE MTN CAN.	5510	2/01/02	52	15.0	7.0	13.4	MISSION RIDGE	5000	1/30/02	41	13.3	7.6	11.9
BLACK PINE SNOTEL	7100	2/01/02	---	4.7	5.0	8.0	MONASHEE PASS CAN.	4500	2/04/02	34	8.9	5.6	9.6
BLEWETT PASS #2	4270	1/29/02	40	11.0	8.1	11.5	MOOSE CREEK SNOTEL	6200	2/01/02	---	10.6	5.7	12.1
BLEWETT PASS#2SNOTEL	4270	2/01/02	---	10.0	6.5	12.5	MORRISSEY RIDGE CAN.	6100	2/01/02	---	18.5	6.8	18.4
BRENDA MINE CAN.	4450	2/01/02	---	12.2	5.8	9.2	MORSE LAKE SNOTEL	5400	2/01/02	---	41.0	18.1	36.6
BRIEF	1600	1/29/02	15	4.3	5.0	6.0	MOSES MTN SNOTEL	4800	2/01/02	---	11.8	4.6	10.4
BROWN TOP AM	6000	1/29/02	159	52.2	18.0	42.5	MOSQUITO RDG SNOTEL	5200	2/01/02	---	28.2	11.4	24.6
BUMPING LAKE (NEW)	3400	1/31/02	52	14.9	9.0	13.3	MOULTON RESERVOIR	6850	1/29/02	17	3.0	3.7	5.2
BUMPING RIDGE SNOTEL	4600	2/01/02	---	25.1	10.3	19.4	MOUNT CRAG SNOTEL	4050	2/01/02	72	22.1	13.7	19.3
BUNCHGRASS MDWSNOTEL	5000	2/01/02	---	23.7	10.2	18.6	MT. KOBAY CAN.	5500	1/28/02	30	8.6	5.9	7.9
CAYUSE PASS	5300	2/01/02	---	63.5E	33.3	54.7	MOUNT GARDNER SNOTEL	2860	2/01/02	---	19.4	9.0	12.0
CHESSMAN RESERVOIR	6200	1/29/02	4	.6	1.8	2.5	MUTTON CREEK #1	5700	1/25/02	37	11.7	4.9	9.4
CHICKEN CREEK	4060	1/29/02	48	10.6	5.8	11.5	N.F. ELK CR SNOTEL	6250	2/01/02	---	6.4	5.2	8.0
CHIWAIKUM G.S.	2500	1/31/02	31	7.3	5.9	8.6	NEW HOZOMEEN LAKE	2800	1/31/02	25	6.7	3.3	7.8
CITY CABIN	2390	2/01/02	---	10.6E	--	--	NEZ PERCE CMP SNOTEL	5650	2/01/02	---	9.3	5.7	9.9
CLOUDY PASS AM	6500	2/01/02	---	33.6E	12.7	29.5	NOISY BASIN SNOTEL	6040	2/01/02	---	26.9	11.3	27.0
COLOCKUM PASS	5370	1/28/02	41	13.2	6.1	11.7	OLALLIE MDWS SNOTEL	3960	2/01/02	---	39.9	19.2	39.2
COMBINATION SNOTEL	5600	2/01/02	---	2.1	2.5	3.4	OLALLIE MEADOWS	3630	2/01/02	---	28.0E	16.8	27.4
COPPER BOTTOM SNOTEL	5200	2/01/02	---	8.3	4.0	8.0	OPHIR PARK	7150	1/27/02	29	7.0	6.5	10.6
COPPER MOUNTAIN	7700	1/26/02	25	5.8	7.3	7.0	PARADISE PARK SNOTEL	5500	2/01/02	---	57.4	25.1	48.1
CORRAL PASS SNOTEL	6000	2/01/02	---	29.7	12.0	22.1	PARK CK RIDGE SNOTEL	4600	2/01/02	---	43.0	17.5	35.0
COUGAR MTN. SNOTEL	3200	2/01/02	---	15.3	7.4	13.7	PETERSON MDW SNOTEL	7200	2/01/02	---	3.1	5.6	6.1
COX VALLEY	4500	2/01/02	---	27.8E	10.4	24.2	PIGTAIL PEAK SNOTEL	5900	2/01/02	132	41.8	17.4	34.3
COYOTE HILL	4200	2/01/02	23	5.0	4.0	7.3	PIKE CREEK SNOTEL	5930	2/01/02	---	15.0	6.7	17.8
DALY CREEK SNOTEL	5780	2/01/02	---	5.1	5.0	7.4	PIPESTONE PASS	7200	1/27/02	13	2.0	2.9	3.2
DEER PARK	5200	2/01/02	---	14.0E	6.1	12.2	POPE RIDGE SNOTEL	3540	2/01/02	48	12.3	7.9	14.9
DEVILS PARK	5900	2/01/02	113	39.0	15.2	30.7	POSTILL LAKE CAN.	4200	1/29/02	25	5.7	4.8	5.8
DISCOVERY BASIN	7050	1/30/02	22	4.4	6.3	6.6	POTATO HILL SNOTEL	4500	2/01/02	---	27.2	12.0	18.5
DIX HILL	6400	1/27/02	22	5.0	5.9	7.6	QUARTZ PEAK SNOTEL	4700	2/01/02	---	19.9	8.6	15.4
DOCK BUTTE AM	3800	2/01/02	---	68.0E	21.0	37.2	ROUND TOP MTN	4020	1/29/02	42	13.1	7.2	--
DOMMERIE FLATS	2200	1/31/02	26	7.2	5.9	6.4	RAGGED RIDGE	3330	1/29/02	33	9.5	6.2	--
EAST RAGGED SADDLE	3740	2/01/02	74	22.8	11.2	14.6	RAINY PASS SNOTEL	4780	2/01/02	---	32.0	13.4	30.2
EASY PASS AM	5200	2/01/02	---	70.0E	16.2	46.2	REX RIVER SNOTEL	1900	2/01/02	111	35.0	10.5	21.7
ELBOW LAKE SNOTEL	3200	2/01/02	98	32.9	13.7	20.4	ROCKER PEAK SNOTEL	8000	2/01/02	---	6.1	7.9	9.1
EMERY CREEK SNOTEL	4350	2/01/02	---	8.6	5.1	10.5	RUSTY CREEK	4000	1/25/02	15	3.3	2.4	4.9
FARRON CAN.	4000	1/30/02	28	8.2	5.3	8.7	SF THUNDER CK AM	2200	2/01/02	---	8.2E	4.5	5.9
FISH CREEK	8000	1/29/02	20	4.0	5.6	--	SADDLE MTN SNOTEL	7900	2/01/02	---	15.8	8.9	17.3
FISH LAKE	3370	1/31/02	91	28.2	12.8	24.5	SALMON MDWS SNOTEL	4500	2/01/02	27	7.7	3.6	7.5
FISH LAKE SNOTEL	3370	2/01/02	72	20.6	12.0	24.7	SAVAGE PASS SNOTEL	6170	2/01/02	70	16.6	9.0	17.6
FLATTOP MTN SNOTEL	6300	2/01/02	---	33.1	14.0	31.8	SAWMILL RIDGE	4700	1/29/02	74	20.2	9.2	22.9
FOURTH OF JULY SUM	3200	2/01/02	46	11.3	7.2	7.1	SCHREIBERS MDW AM	3400	2/01/02	---	45.0E	16.5	32.4
FRED BURR PASS	8000	1/28/02	50	13.7	--	--	SKALKAHO SNOTEL	7260	2/01/02	---	15.0	8.8	16.0
FREEZEOUT CK. TRAIL	3500	1/29/02	30	7.1	3.6	8.8	SPOTTED BEAR MTN.	7000	1/28/02	31	7.1	5.2	10.1
FROHNER MDWS SNOTEL	6480	2/01/02	---	2.7	3.6	5.0	STAHL PEAK SNOTEL	6030	2/01/02	---	26.4	10.3	24.1
GOAT CREEK	3600	1/30/02	18	3.9	3.7	5.1	STAMPEDE PASS SNOTEL	3860	2/01/02	---	38.4	17.3	31.0
GRASS MOUNTAIN #2	2900	1/29/02	37	12.7	.0	7.5	STEMILT SLIDE	5000	1/28/02	34	9.6	6.1	10.4
GRAVE CRK SNOTEL	4300	2/01/02	---	10.8	6.3	11.7	STEVENS PASS SNOTEL	4070	2/01/02	---	29.7	14.1	30.2
GREEN LAKE	6000	2/01/02	---	27.0E	--	23.1	STEVENS PASS SAND SD	3700	1/31/02	90	26.7	15.7	24.0
GREEN LAKE SNOTEL	6000	2/01/02	54	18.7	8.6	15.4	STORM LAKE	7780	1/30/02	24	5.2	7.5	8.3
GREYBACK RES CAN.	4700	1/30/02	29	7.7	4.4	6.3	STRYKER BASIN	6180	1/29/02	80	25.0	9.4	21.3
GRIFFIN CR DIVIDE	5150	1/31/02	31	7.2	--	--	SUMMERLAND RES CAN.	4200	1/29/02	26	5.8	3.6	--
GROUSE CAMP SNOTEL	5380	2/01/02	---	17.4	7.6	14.0	SUMMIT G.S.	4600	1/30/02	22	4.8	5.1	5.6
HAMILTON HILL CAN.	4550	2/01/02	31	7.6	6.6	10.0	SUNSET SNOTEL	5540	2/01/02	---	15.2	9.5	20.9
HAND CREEK SNOTEL	5030	2/01/02	---	6.7	4.0	8.6	SURPRISE LKS SNOTEL	4250	2/01/02	---	40.1	20.3	32.2
HARTS PASS SNOTEL	6500	2/01/02	105	29.6	14.6	31.3	TEN MILE LOWER	6600	1/29/02	14	2.4	3.2	4.7
HELL ROARING DIVIDE	5770	1/31/02	75	20.2	7.4	20.7	TEN MILE MIDDLE	6800	1/29/02	19	4.5	5.0	7.1
HERRIG JUNCTION	4850	1/29/02	68	19.9	7.6	18.1	THUNDER BASIN	4200	1/30/02	60	16.2	8.6	14.5
HIGH RIDGE SNOTEL	4980	2/01/02	---	19.9	12.1	16.9	TINKHAM CREEK SNOTEL	3000	2/01/02	---	27.2	13.4	22.7
HOLBROOK	4530	1/28/02	28	6.5	3.0	7.2	TOGO	3370	1/30/02	32	8.6	6.0	7.4
HOODOO BASIN SNOTEL	6050	2/01/02	---	32.9	12.5	30.1	TOUCHET SNOTEL	5530	2/01/02	93	29.0	13.5	23.8
HUMBOLDT GLCH SNOTEL	4250	2/01/02	---	12.6	6.7	9.5	TRINKUS LAKE	6100	1/28/02	80	24.6	18.9	26.6
HURRICANE	4500	2/01/02	---	14.0E	1.7	11.7	TROUGH #2 SNOTEL	5310	2/01/02	26	8.1	5.3	7.5
INTERGAARD	6450	1/25/02	9	2.0	3.6	4.8	TROUT CREEK CAN.	5650	1/31/02	24	5.5	3.5	5.5
ISINTOK LAKE CAN.	5100	1/29/02	19	3.0	4.2	5.2	TRUMAN CREEK	4060	1/29/02	13	2.9	3.2	3.5
JUNE LAKE SNOTEL	3200	2/01/02	---	48.5	18.1	28.4	TUNNEL AVENUE	2450	1/30/02	54	17.8	11.6	14.8
KLESILKA CAN.	3450	1/28/02	39	9.4	2.2	7.6	TV MOUNTAIN	6800	1/28/02	42	11.1	8.3	12.0
KRAFT CREEK SNOTEL	4750	2/01/02	---	8.7	6.3	10.9	TWELVEMILE SNOTEL	5600	2/01/02	---	12.0	6.9	12.8
LESTER CREEK	3100	1/29/02	54	16.8	8.2	14.2	TWIN CAMP	4100	1/29/02	54	14.0	7.8	17.4
LOLO PASS SNOTEL	5240	2/01/02	80	18.6	9.5	20.9	TWIN LAKES SNOTEL	6400	2/01/02	---	29.5	13.3	27.5
LONE PINE SNOTEL	3800	2/01/02	---	40.9	16.2	24.1	TWIN SPIRIT DIVIDE	3480	2/01/02	61	19.4	7.3	10.5
LOOKOUT SNOTEL	5140	2/01/02	---	27.0	11.9	21.5	UPPER HOLLAND LAKE	6200	1/28/02	80	21.6	15.0	23.7
LOST HORSE MTN CAN.	6300	2/04/02	24	5.7	3.7	6.5	UPPER WHEELER SNOTEL	4400	2/01/02	---	7.8	6.8	9.2
LOST HORSE SNOTEL	5000	2/01/02	58	15.4	7.5	13.1	WARM SPRINGS SNOTEL	7800	2/01/02	---	11.6	9.9	13.8
LOST LAKE SNOTEL	6110	2/01/02	---	47.4	16.3	40.6	WASEL DIVIDE	5450	1/30/02	78	24.0	9.2	21.5
LUBRECHT FOREST NO 3	5450	1/30/02	18	3.0	2.8	4.6	WELLS CREEK SNOTEL	4200	2/01/02	81	24.6	11.7	--
LUBRECHT FOREST NO 4	4650	1/30/02	9	1.3	1.9	2.5	WHITE PASS RS SNOTEL	4500	2/01/02	---	18.3	8.2	17.1
LUBRECHT FOREST NO 6	4040	1/30/02	12	2.0	2.2	2.8	WHITE ROCKS MTN CAN.	7200	2/01/02	63	21.4	--	--

Washington SNOTEL Sites





Natural Resources Conservation Service

Washington State
Snow, Water and Climate Services

Program Contacts

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:
<http://www.wa.nrcs.usda.gov/snow/snow.htm>

Oregon:
<http://www.or.nrcs.usda.gov/snow/snow.htm>

Idaho:
<http://idsnow.id.nrcs.usda.gov>

National Water and Climate Center (NWCC):
<http://www.wcc.nrcs.usda.gov>

NWCC Anonymous FTP Server:
<ftp.wcc.nrcs.usda.gov>

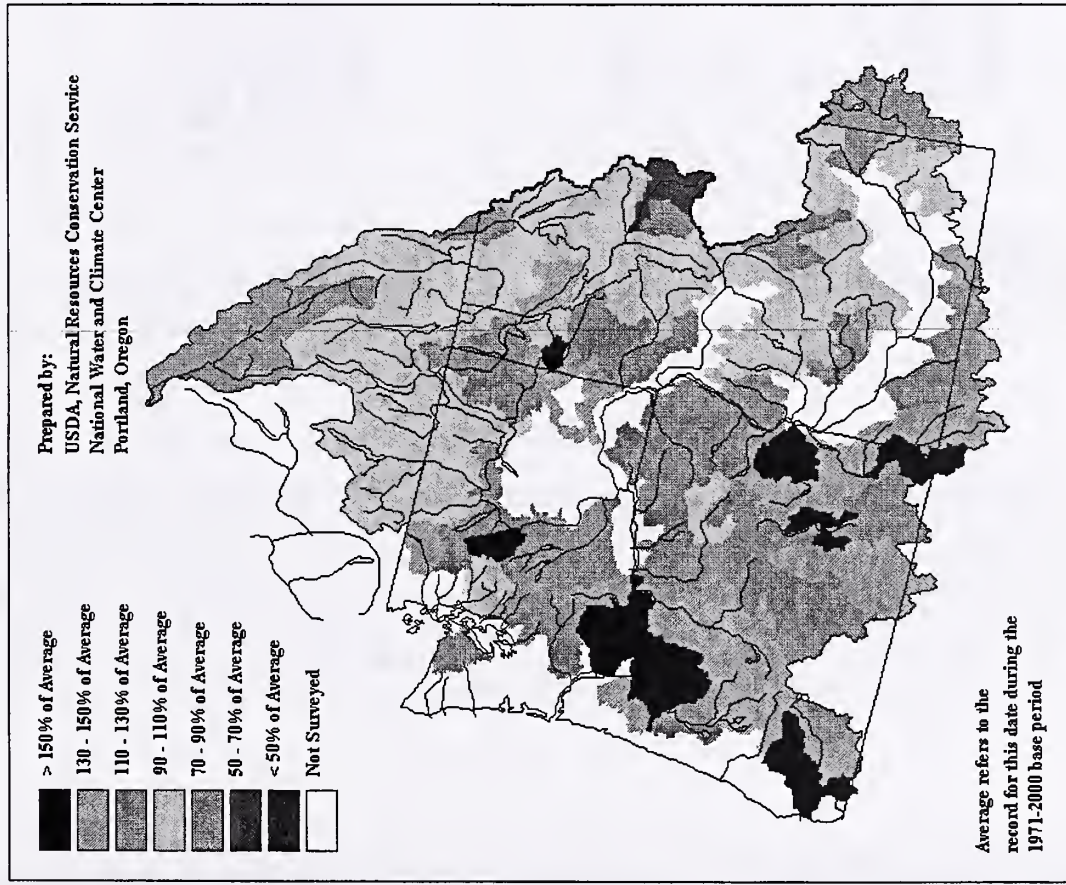
USDA-NRCS Agency Homepages

Washington:
<http://www.wa.nrcs.usda.gov/nrcs>

NRCS National:
<http://www.ftw.nrcs.usda.gov>

Mountain Snow Water Equivalent

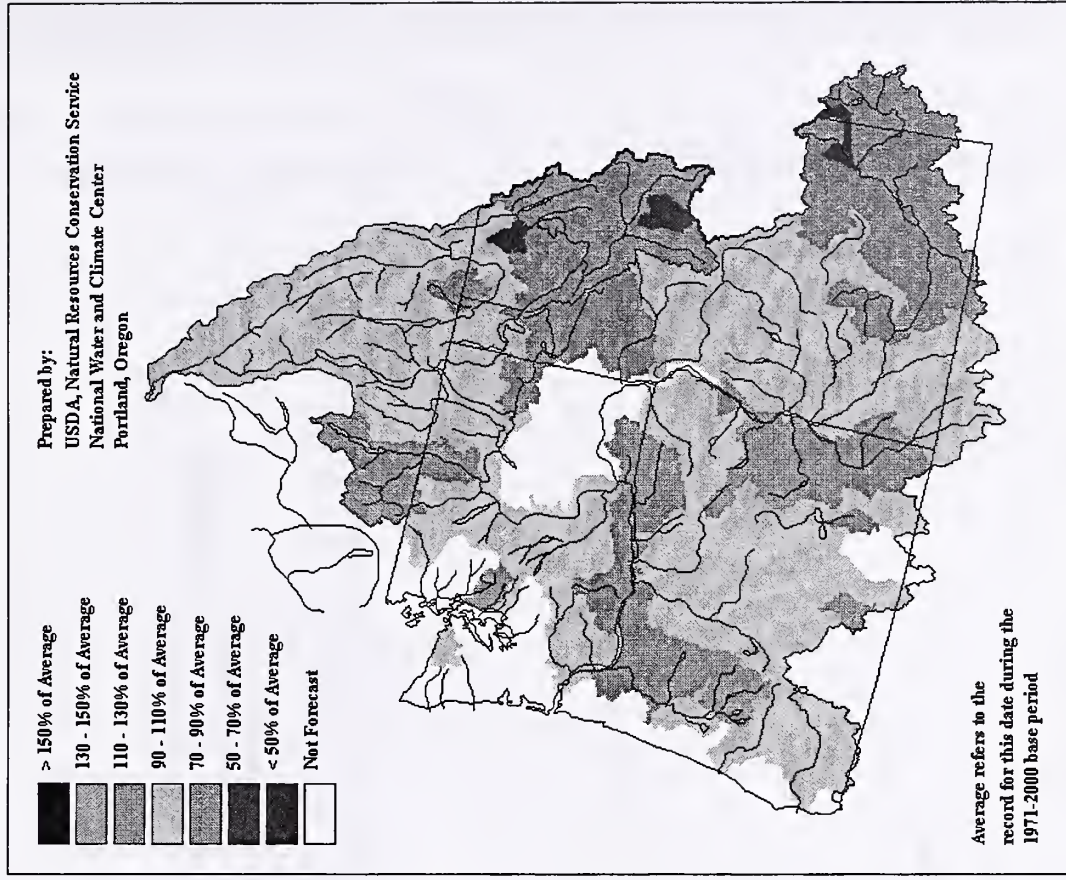
as of February 1, 2002 (in relation to the average for this date)



United States Department of Agriculture -- Natural Resources Conservation Service
in cooperation with
The Province of British Columbia -- Ministry of the Environment

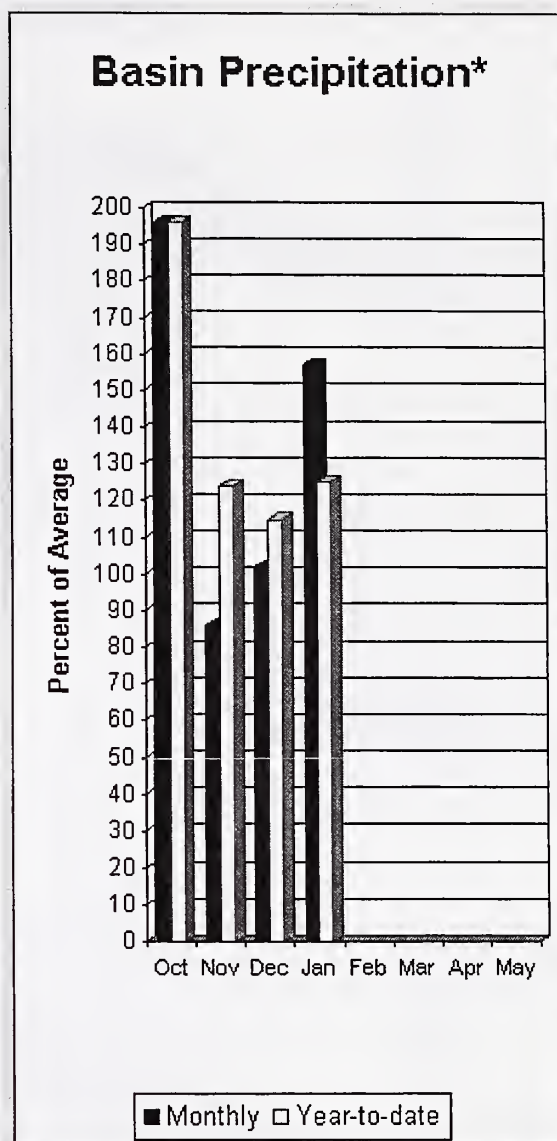
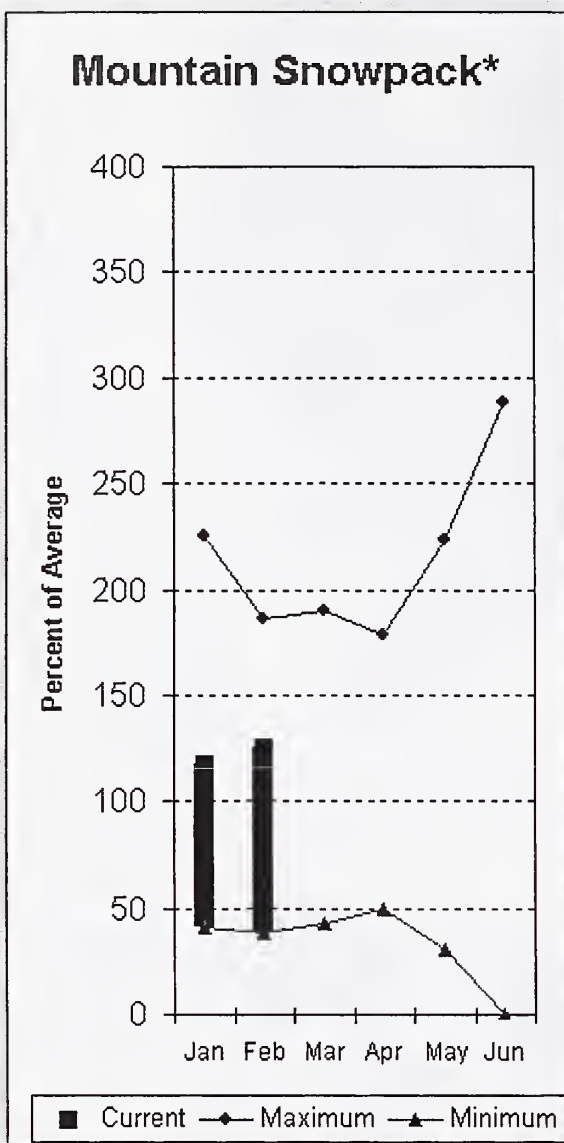
Spring and Summer Streamflow Forecasts

as of February 1, 2002 (in relation to the average for this date)



United States Department of Agriculture -- Natural Resources Conservation Service
in cooperation with
United States Department of Commerce, NOAA -- National Weather Service

Spokane River Basin



*Based on selected stations

The February 1 forecasts for summer runoff within the Spokane River Basin are 120% of average near Post Falls and 118% at Long Lake. The forecast is based on a basin snowpack that is 125% of average and precipitation that is 125% of average for the water year. Precipitation for January was above normal at 157% of average. Streamflow on the Spokane River at Long Lake, was 107% of average for January. February 1 storage in Coeur d'Alene Lake, was 115,000-acre feet, 99% of average and 48% of capacity. Snowpack at Quartz Peak SNOTEL site was 129% of average with 19.9 inches of water content. Average temperatures in the Spokane basin were 3 degrees above normal for January and 2 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.

Spokane River Basin

SPOKANE RIVER BASIN Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding *		30% (1000AF)	10% (1000AF)	
SPOKANE near Post Falls (2)	APR-SEP	2584	2939	3180	120	3421	3776	2650
	APR-JUL	2478	2824	3060	120	3296	3642	2550
SPOKANE at Long Lake (2)	APR-JUL	2702	3100	3370	118	3640	4038	2850
	APR-SEP	2925	3342	3626	118	3910	4327	3070

SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
COEUR D'ALENE	238.5	115.0	28.1	115.6

SPOKANE RIVER BASIN Watershed Snowpack Analysis - February 1, 2002

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
SPOKANE RIVER	12	211	128
NEWMAN LAKE	1	199	129

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

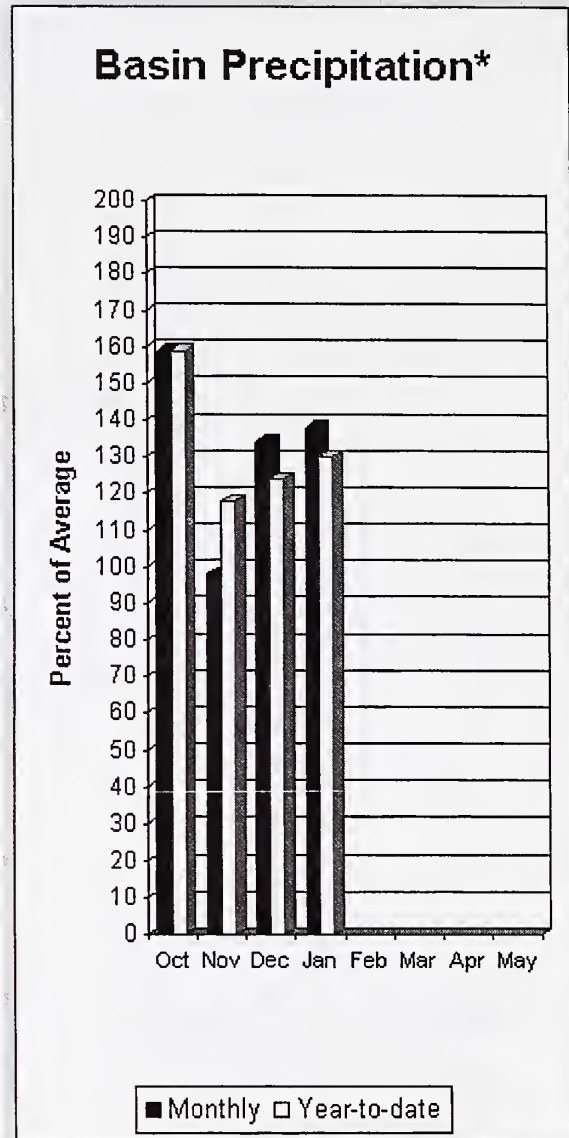
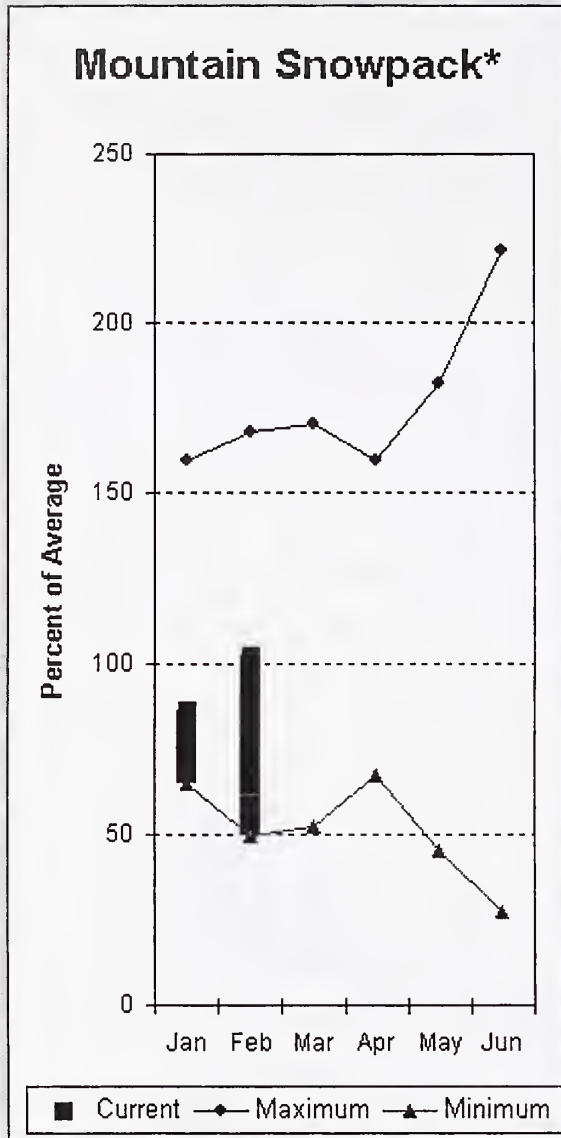
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

Spokane River Basin
Percent of Average
February 1, 2002

Snowpack - 125%
Precipitation - 125%
Reservoir Capacity - 99%



Colville - Pend Oreille River Basins



*Based on selected stations

The April – September average forecast for the Kettle River streamflow is 108%, Colville at Kettle Falls is 102%, and Priest River near the town of Priest River is 105%. January streamflow was 101% of average on the Pend Oreille River, 102% on the Columbia at the International Boundary and 135% on the Kettle River. February 1 snow cover was 93% of average in the Pend Oreille Basin and 96% in the Kettle River Basin. Bunchgrass Meadows SNOTEL site had 23.7 inches of snow water on the snow pillow. Normally Bunchgrass would have 18.6 inches on February 1. Precipitation during January was 138% of average, bringing the year-to-date precipitation to 130% of average. Reservoir storage in Roosevelt and Banks lakes was reported to be 92% of average and 75% of capacity on February 1. Average temperatures were 3-4 degrees above normal for January and 2-3 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.

Colville - Pend Oreille River Basins

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<----- Drier ----- Future Conditions ----- Wetter ----->						
		90% 70%		Chance Of Exceeding *		30% 10%		30-Yr Avg.
		(1000AF)	(1000AF)	50% (Most Probable)	(% AVG.)	(1000AF)	(1000AF)	
PEND OREILLE Lake Inflow (2)	APR-JUL	8640	10396	11590	91	12784	14540	12700
	APR-SEP	8443	10924	12610	91	14296	16777	13900
PRIEST near Priest River (1,2)	APR-JUL	696	805	855	106	905	1014	810
	APR-SEP	737	856	910	105	964	1083	865
PEND OREILLE b1 Box Canyon (2)	APR-JUL	9117	10715	11800	92	12885	14483	12900
	APR-SEP	8990	11270	12820	91	14370	16650	14100
CHAMOKANE CREEK near Long Lake	MAY-AUG	5.1	7.8	9.7	95	11.6	14.3	10.2
COLVILLE at Kettle Falls	APR-SEP	103	127	144	102	161	185	141
	APR-JUL	93	116	132	103	148	171	128
KETTLE near Laurier	APR-SEP	1755	1972	2120	108	2268	2485	1970
	APR-JUL	1678	1875	2010	108	2145	2342	1870
COLUMBIA at Birchbank (1,2)	APR-JUL	26717	30694	32500	93	34306	38283	34900
	APR-SEP	33164	38209	40500	93	42791	47836	43500
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	49117	57701	61600	96	65499	74083	63990
	APR-JUL	41346	48535	51800	96	55065	62254	53850

COLVILLE - PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
ROOSEVELT	5232.0	3803.2	1750.9	4222.2
BANKS	715.0	680.7	695.7	630.6

COLVILLE - PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - February 1, 2002

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
COLVILLE RIVER	1	143	116
PEND OREILLE RIVER	65	168	93
KETTLE RIVER	6	154	96

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

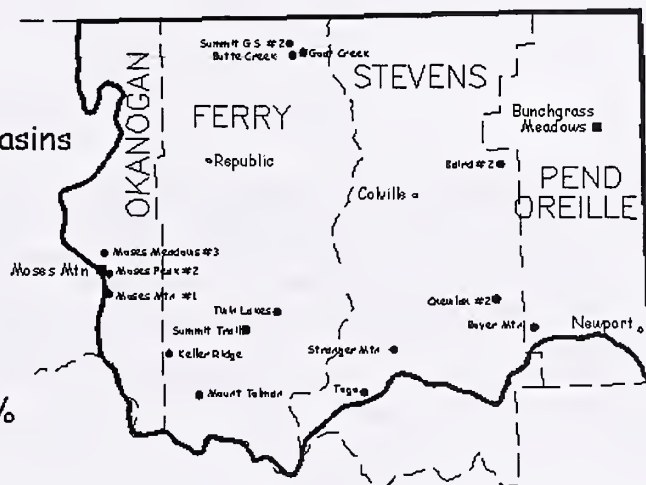
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

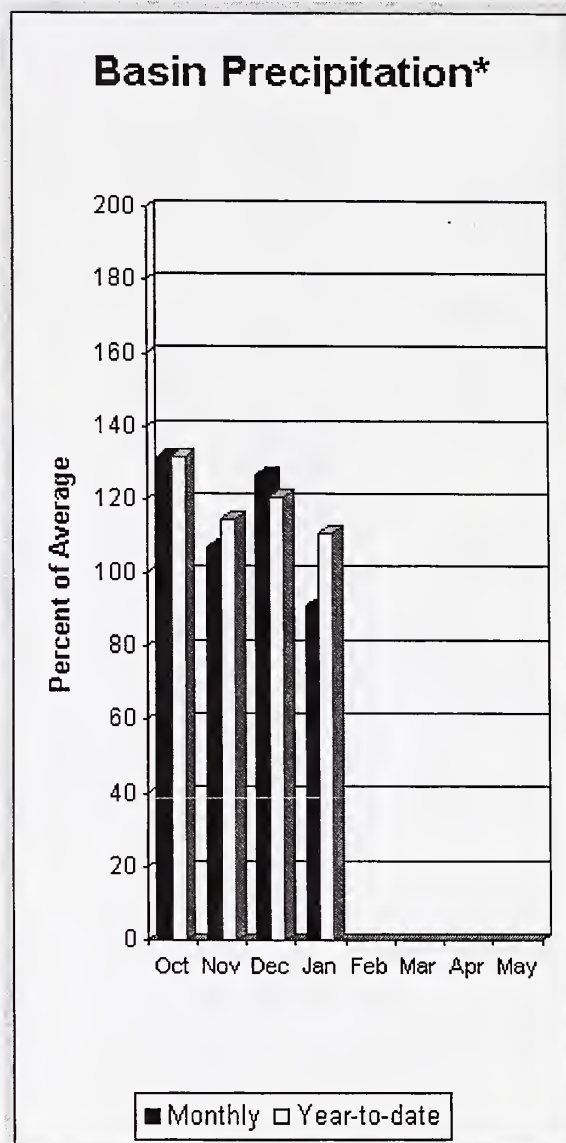
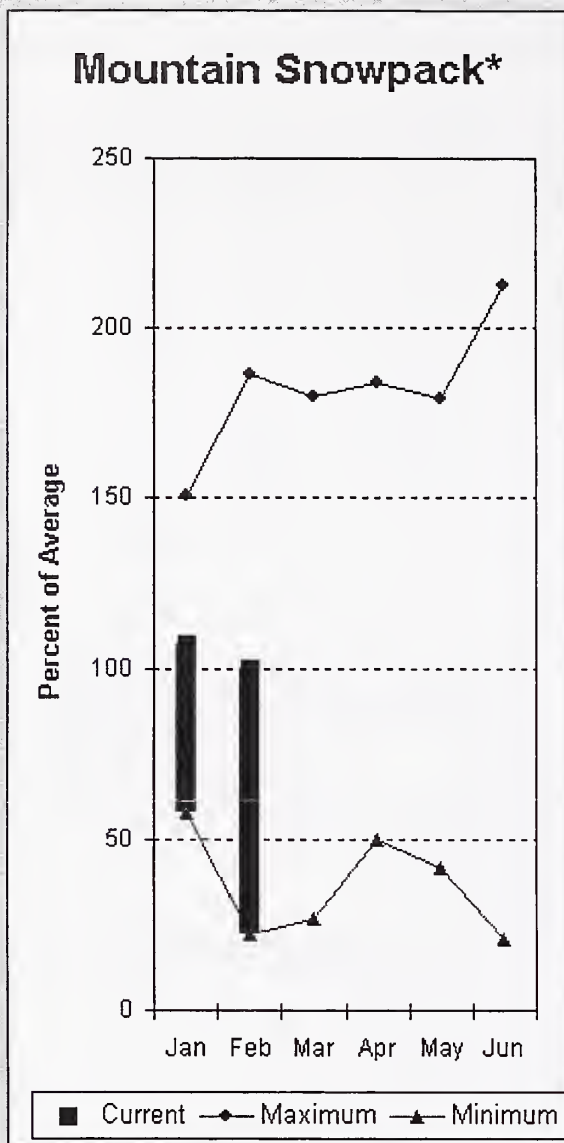
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Colville-Pend Oreille River Basins
Percent of Average
February 1, 2002

Snowpack - 102%
Precipitation - 130%
Reservoir Capacity - 92%



Okanogan - Methow River Basins



*Based on selected stations

Summer runoff average forecast for the Okanogan River is 86%, Similkameen River is 86%, Methow River is 97% and Salmon Creek is 94%. February 1 snow cover on the Okanogan was 103% of average and Methow was 101%. January precipitation in the Okanogan-Methow was 91% of average, with precipitation for the water year at 111% of average. January streamflow for the Methow River was 89% of average, 111% for the Okanogan River and 118% for the Similkameen. Snow-water content at Harts Pass SNOTEL was 29.6 inches. Average for this site is 31.3 inches on February 1. Combined storage in the Conconully Reservoirs was 6,000-acre feet, which is 27% of capacity and 39% of the February 1 average. Temperatures were 4-6 degrees above normal for the past month and 2-4 degrees above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Okanogan - Methow River Basins

OKANOGAN - METHOW RIVER BASINS Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding *		30% (1000AF)	10% (1000AF)	
SIMILKAMEEN near Nighthawk (1)	APR-JUL	835	1058	1160	86	1262	1485	1350
	APR-SEP	930	1150	1250	86	1350	1570	1450
OKANOGAN near Tonasket (1)	APR-JUL	670	1155	1375	87	1595	2080	1580
	APR-SEP	760	1286	1525	86	1764	2290	1770
SALMON CREEK near Conconully	APR-JUL	6.5	13.8	18.8	94	24	31	20
	APR-SEP	7.2	14.6	19.7	94	25	32	21
BEAVER CREEK below SF near Twisp	APR-SEP	6.6	10.4	13.0	107	15.6	19.4	12.1
	APR-JUL	5.8	9.5	12.0	108	14.5	18.2	11.1
METHOW RIVER near Pateros	APR-SEP	760	873	950	96	1027	1140	985
	APR-JUL	721	823	892	98	961	1063	910

OKANOGAN - METHOW RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
SALMON LAKE	10.5	3.5	6.9	8.4
CONCONULLY RESERVOIR	13.0	2.9	5.8	8.2

OKANOGAN - METHOW RIVER BASINS Watershed Snowpack Analysis - February 1, 2002

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
OKANOGAN RIVER	16	182	103
OMAK CREEK	1	257	113
SANPOIL RIVER	0	0	0
SIMILKAMEEN RIVER	3	128	81
TOATS COULEE CREEK	0	105	0
CONCONULLY LAKE	3	208	104
METHOW RIVER	5	217	101

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

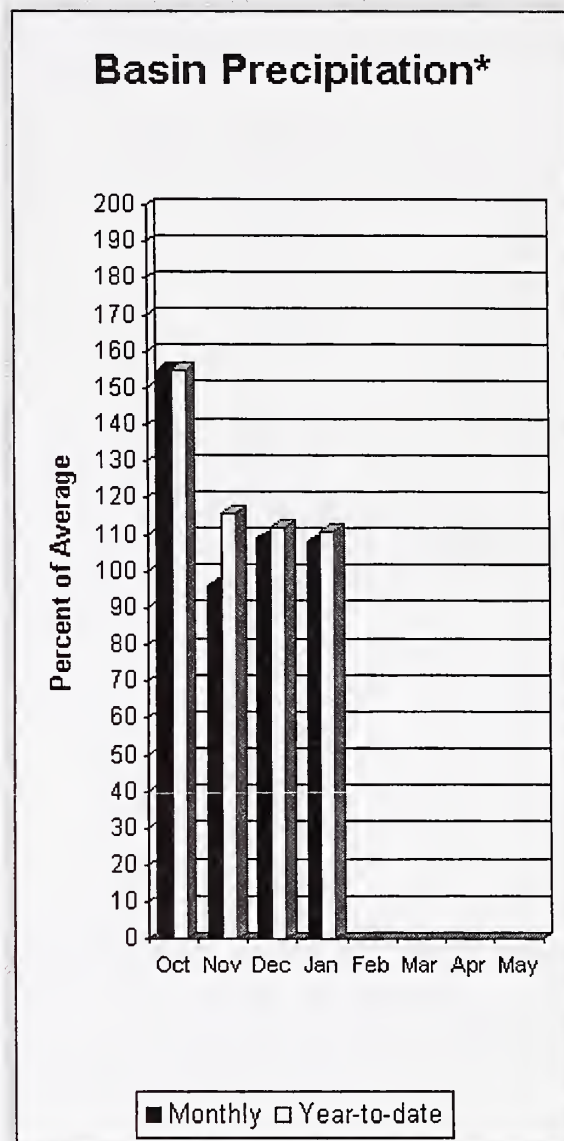
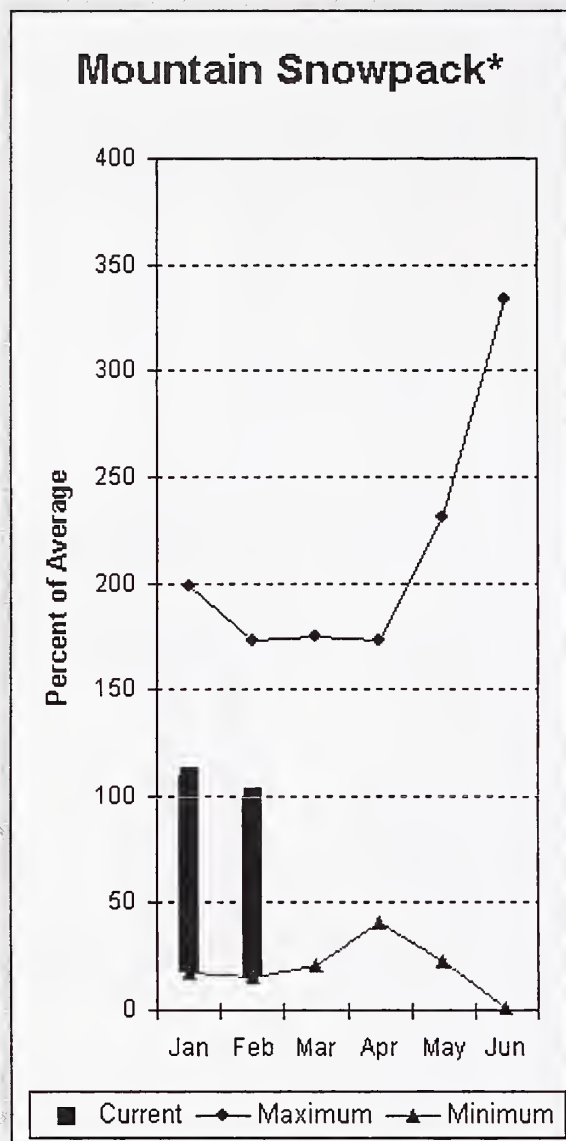
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Okanogan-Methow River Basins
Percent of Average
February 1, 2002

Snowpack - 100%
Precipitation - 111%
Reservoir Capacity - 39%



Wenatchee - Chelan River Basins



*Based on selected stations

Precipitation during January was 108% of average in the basin and 111% for the year-to-date. Runoff for Entiat River is forecast to be 98% of average for the summer. The February-September average forecast for Chelan River is 99%, Wenatchee River at Plain is 100% and Stehekin is 101%. Icicle, Stemilt and Squilchuck creeks are all expected to fall into the same forecast range. January average streamflows on the Chelan River were 113% and on the Wenatchee River 141%. February 1 snowpack in the Wenatchee River Basin was 102% of average; the Chelan, 117%; the Entiat, 79%; Stemilt Creek, 89% and Colockum Creek, 111%. Reservoir storage in Lake Chelan was 336,000-acre feet, 106% of February 1 average and 50% of capacity. Lyman Lake SNOTEL had the most snow water with 49.2 inches of water. This site would normally have 43.4 inches on February 1. Temperatures were 4-5 degrees above normal for January and 2-4 degrees above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Wenatchee - Chelan River Basins

Streamflow Forecasts - February 1, 2002

		<<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
CHELAN RIVER near Chelan	APR-SEP	1003	1109	1180	99	1251	1357	1190
	APR-JUL	901	990	1050	100	1110	1199	1050
STEHEKIN near STEHEKIN	APR-SEP	716	784	830	101	876	944	825
	APR-JUL	621	674	711	102	748	801	700
ENTIAT RIVER near Ardenvoir	APR-SEP	193	218	235	98	252	277	240
	APR-JUL	173	196	211	98	226	249	215
WENATCHEE at Plain	APR-SEP	1022	1128	1200	100	1272	1378	1200
	APR-JUL	950	1028	1080	100	1132	1210	1080
WENATCHEE R. at Peshastin	APR-SEP	1194	1456	1635	100	1814	2076	1635
	APR-JUL	969	1273	1480	100	1687	1991	1480
STEMILT nr Wenatchee (miners in)	MAY-SEP	85	113	132	96	151	179	138
ICICLE CREEK near Leavenworth	APR-SEP	294	318	334	97	350	374	345
	APR-JUL	272	294	309	97	324	346	320
COLUMBIA R. bl Rock Island Dam (2)	APR-SEP	56783	63343	67800	98	72257	78817	69540
	APR-JUL	45988	52842	57500	97	62158	69012	59020

WENATCHEE - CHELAN RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
CHELAN LAKE	676.1	335.7	365.1	315.5

WENATCHEE - CHELAN RIVER BASINS Watershed Snowpack Analysis - February 1, 2002

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
CHELAN LAKE BASIN	5	250	117
ENTIAT RIVER	2	129	79
WENATCHEE RIVER	13	178	102
SQUILCHUCK CREEK	0	0	0
STEMILT CREEK	2	135	89
COLOCKUM CREEK	2	187	111

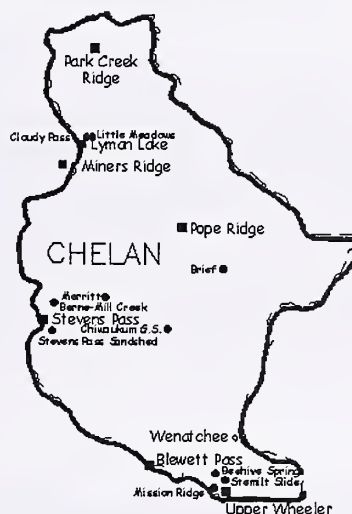
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

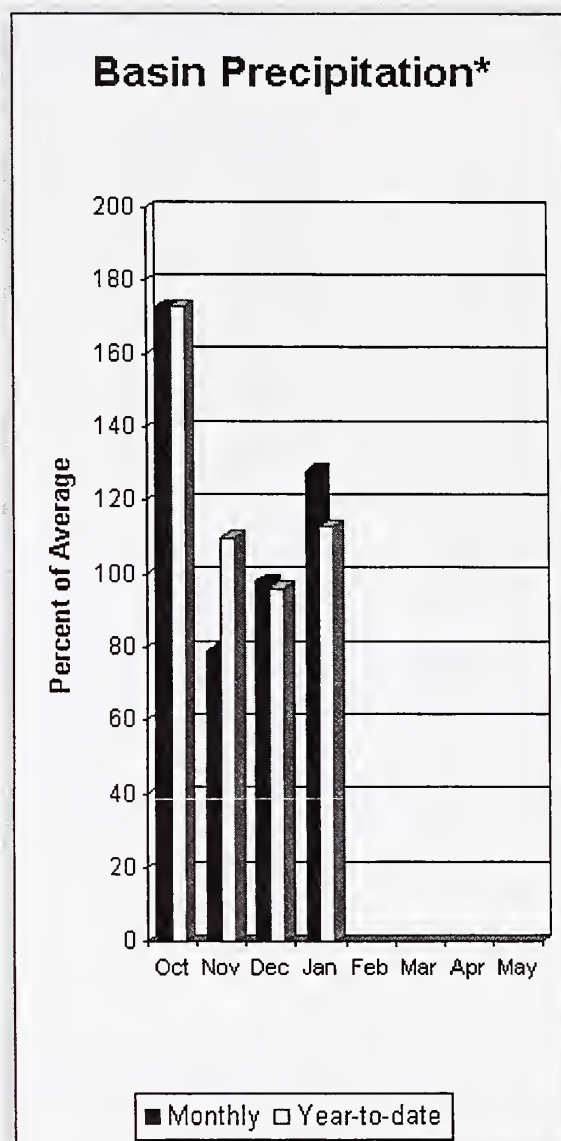
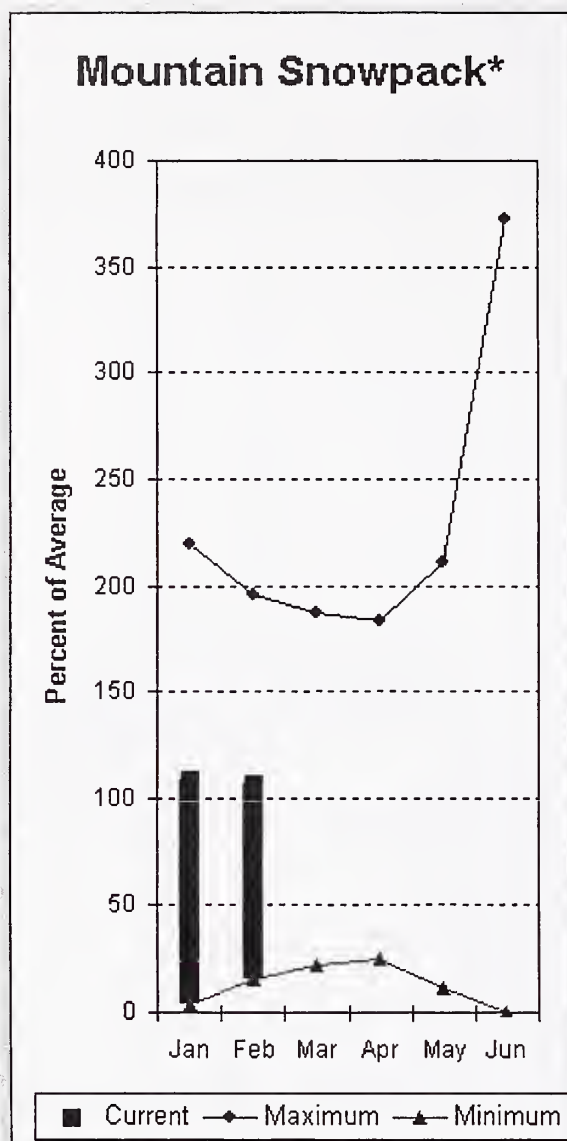
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

Wenatchee-Chelan River Basins
Percent of Average
February 1, 2002

Snowpack - 102%
Precipitation - 111%
Reservoir Capacity - 106%



Upper Yakima River Basin



*Based on selected stations

February 1 reservoir storage for the Upper Yakima reservoirs was 328,000-acre feet, 74% of average. Forecasts for the Yakima River at Cle Elum are 105% of average and the Teanaway River near Cle Elum is at 99%. Lake inflows are all forecasted to be near average this summer. January streamflows within the basin were Yakima near Cle Elum at 122% and Cle Elum River near Roslyn at 140%. February 1 snowpack was 106% based upon 11 snow courses and SNOTEL readings within the Upper Yakima Basin. Precipitation was 128% of average for January and 113% year-to-date for water. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Upper Yakima River Basin

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<<----- Drier -----		Future Conditions		----- Wetter ----->>		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	Chance Of Exceeding * (% AVG.)	30% (1000AF)	10% (1000AF)	
KEECHELUS LAKE INFLOW	APR-JUL	109	123	133	110	143	157	121
	APR-SEP	120	135	146	110	157	172	133
KACHESS LAKE INFLOW	APR-JUL	95	107	115	104	123	135	111
	APR-SEP	103	116	125	104	134	147	120
CLE ELUM LAKE INFLOW	APR-JUL	367	402	425	104	448	483	410
	APR-SEP	399	440	468	104	496	537	450
YAKIMA at Cle Elum	APR-JUL	736	810	860	105	910	984	820
	APR-SEP	815	895	950	105	1005	1085	905
TEANAWAY near Cle Elum	APR-JUL	118	132	142	99	152	166	143
	APR-SEP	121	135	145	99	155	169	146

UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
KEECHELUS	157.8	79.1	25.4	89.9
KACHESS	239.0	88.9	117.6	139.4
CLE ELUM	436.9	159.7	91.2	215.4

UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - February 1, 2002

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
UPPER YAKIMA RIVER	11	187	106

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

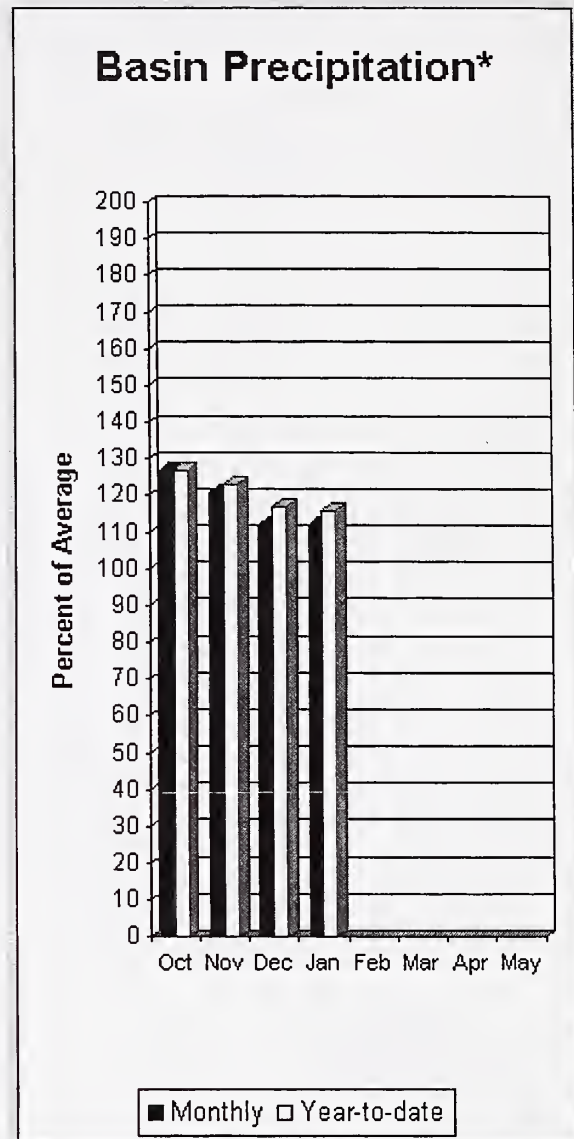
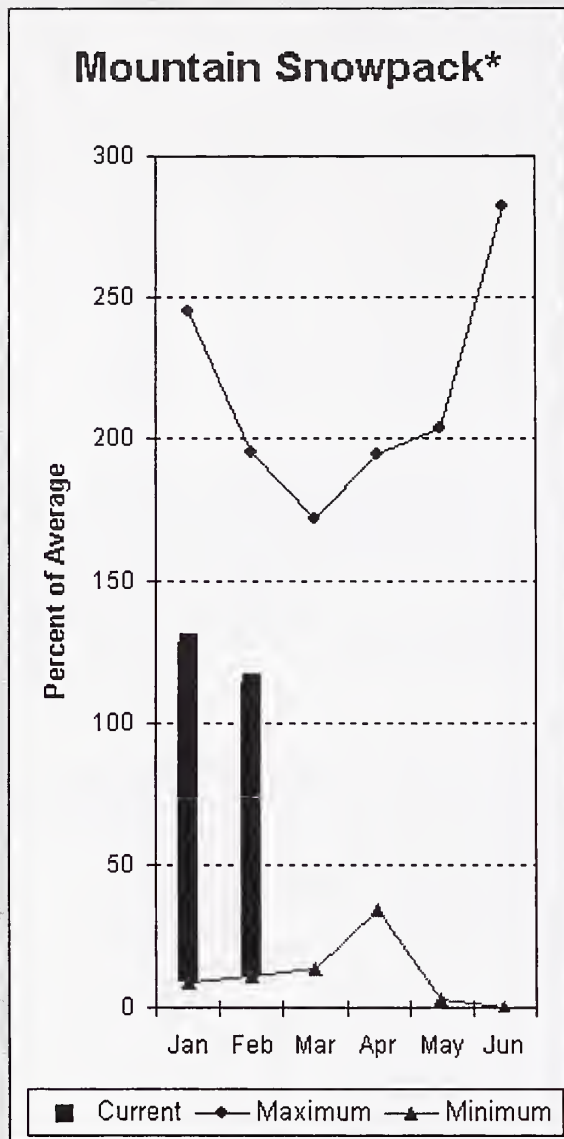
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.



Upper Yakima River Basin Percent of Average February 1, 2002

Snowpack - 106%
 Precipitation - 113%
 Reservoir Capacity - 74%

Lower Yakima River Basin



*Based on selected stations

January average streamflows within the basin were: Yakima River near Parker, 122%; Naches River near Naches, 149%; and Yakima River at Kiona, 87%. February 1 reservoir storage for Bumping and Rimrock reservoirs was 103,000-acre feet, 85% of average. Forecast averages for Yakima River near Parker are 104%; American River near Nile, 107%; Ahtanum Creek, 98%; and Klickitat River near Glenwood, 112%. February 1 snowpack was 117% based upon 8 snow courses and SNOTEL readings within the Lower Yakima Basin. Precipitation was 112% of average for January and 116% year-to-date for water. Temperatures were 5 degrees above normal for the month and 2 degrees above average for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Lower Yakima River Basin

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<----- Drier ----- Future Conditions ----- Wetter ----->						
		90% 70%		Chance Of Exceeding *		30% 10%		30-Yr Avg.
		(1000AF)	(1000AF)	50% (Most Probable)	(% AVG.)	(1000AF)	(1000AF)	
BUMPING LAKE INFLOW	APR-SEP	119	134	145	110	156	171	132
	APR-JUL	111	125	134	110	143	157	122
AMERICAN RIVER near Nile	APR-SEP	105	118	126	107	134	147	118
	APR-JUL	96	107	115	107	123	134	108
RIMROCK LAKE INFLOW	APR-SEP	203	228	245	102	262	287	240
	APR-JUL	174	194	207	101	220	240	205
NACHES near Naches	APR-SEP	706	783	835	100	887	964	835
	APR-JUL	645	712	757	100	802	869	755
AHTANUM CREEK nr Tampico (2)	APR-SEP	26	38	45	98	53	64	46
	APR-JUL	25	35	42	99	49	59	42
YAKIMA near Parker	APR-SEP	1748	1940	2070	104	2200	2392	1990
	APR-JUL	1586	1758	1875	104	1992	2164	1800
Klickitat near Glenwood	APR-JUN	124	137	145	112	153	166	129
	APR-SEP	153	171	183	112	195	213	163

LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
BUMPING LAKE	33.7	18.0	3.3	9.9
RIMROCK	198.0	85.0	98.6	111.8

LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - February 1, 2002

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

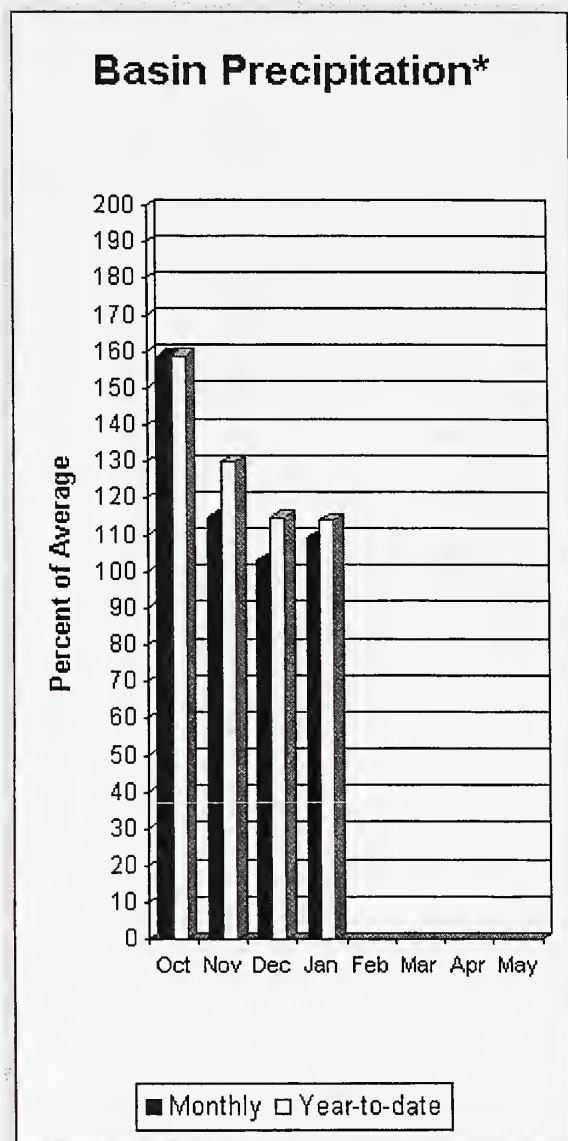
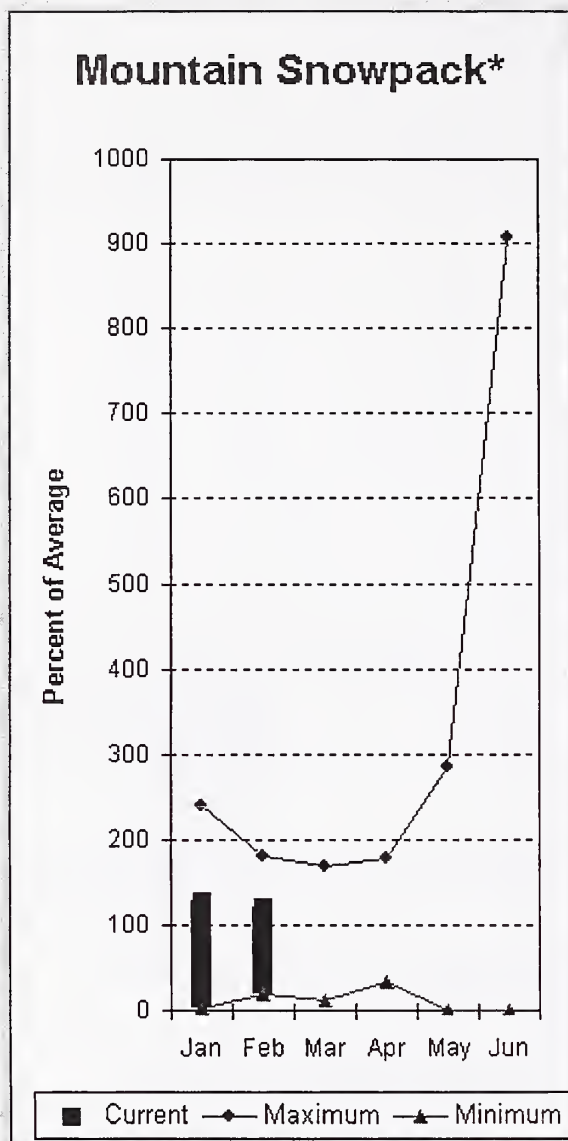
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Lower Yakima River Basin
Percent of Average
February 1, 2002

Snowpack - 114%
Precipitation - 116%
Reservoir Capacity - 85%

Walla Walla River Basin



*Based on selected stations

January precipitation was 109% of average, maintaining the year-to-date precipitation at 114% of average. Snowpack in the basin was 120% of average. Streamflow forecasts are 115% of average for Mill Creek and 109% for the SF Walla Walla near Milton-Freewater. January streamflow was 97% of average for the Walla Walla River. Average temperatures were 3-4 degrees above normal for January and have averaged 1-2 degrees above throughout the water year.

For more information contact your local Natural Resources Conservation Service office.

Walla Walla River Basin

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<----- Drier ----->		Future Conditions		>----- Wetter ----->		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
MILL CREEK at Walla Walla	APR-SEP	13.1	17.9	21	115	25	29	18.4
	APR-JUL	12.9	17.7	21	115	24	29	18.2
SF WALLA WALLA near Milton-Freewater	APR-JUL	47	54	58	109	62	69	53
	APR-SEP	60	67	72	109	77	84	66

WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of January					WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - February 1, 2002		
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg	Watershed	Number of Data Sites	This Year as % of Last Yr Average
					WALLA WALLA RIVER	2	191 120

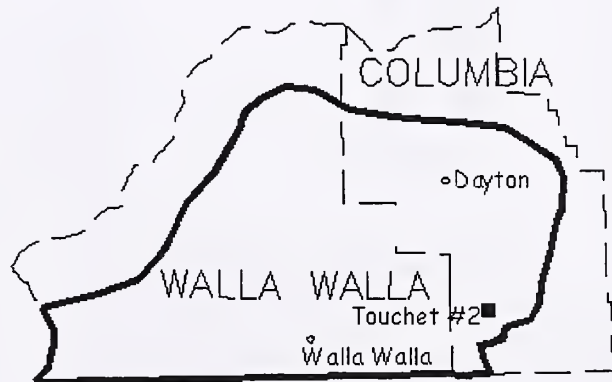
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The average is computed for the 1971-2000 base period.

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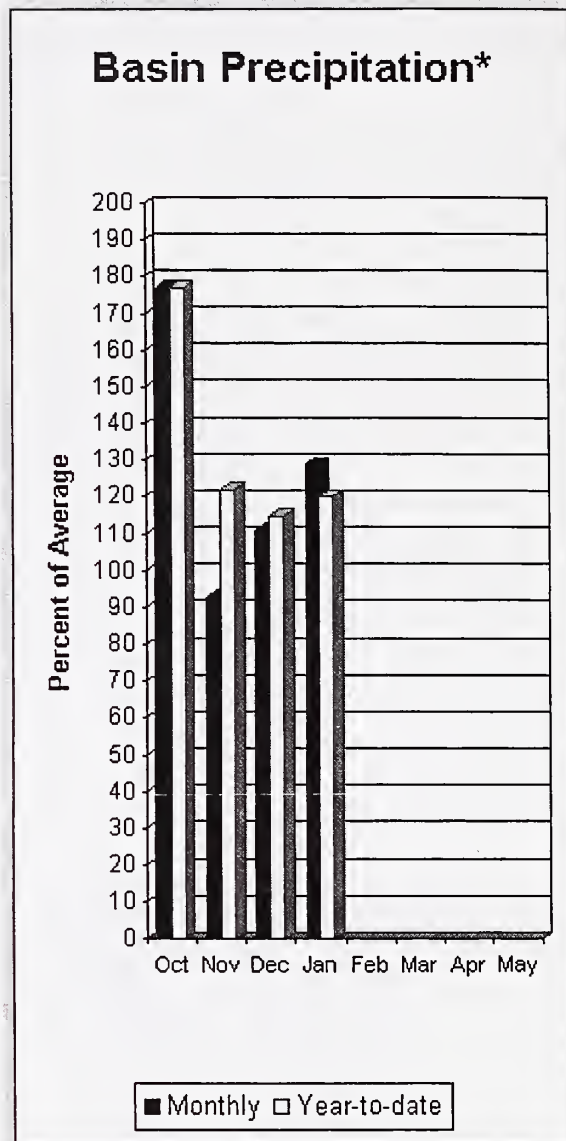
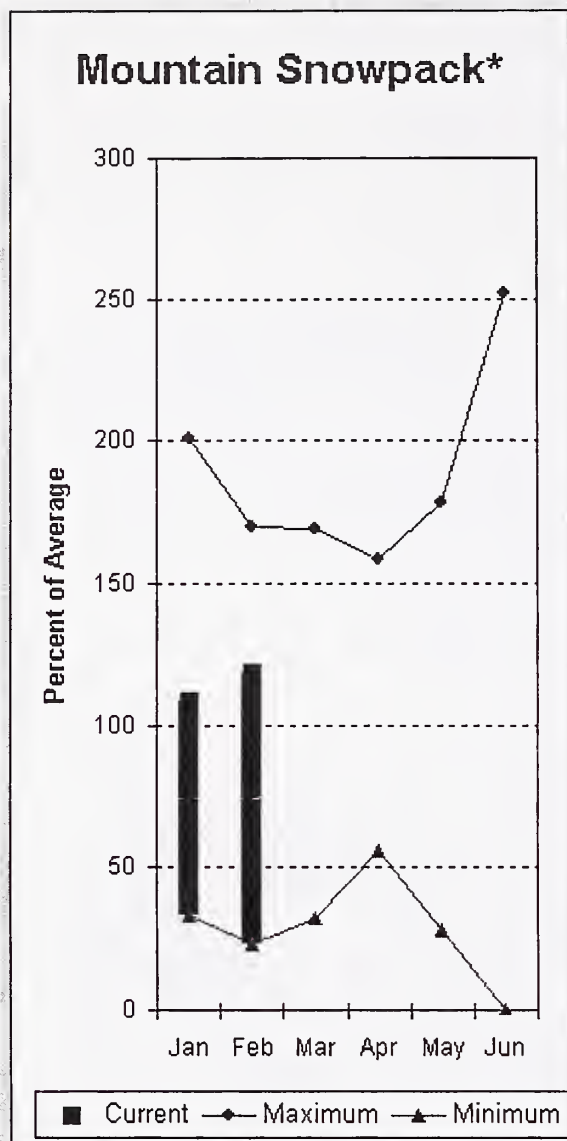
Walla Walla River Basin
Percent of Average
February 1, 2002

Snowpack - 120%
Precipitation - 114%



High Ridge ■

Lower Snake River Basin



*Based on selected stations

The April - September forecast is for 113% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 97% and 99% of normal respectively. January precipitation was 129% of average, bringing the year-to-date precipitation to 120% of average. February 1 snowpack readings averaged 118% of normal. January streamflow was 67% of average for Snake River below Lower Granite Dam and 66% for Grande Ronde River near Troy. Average temperatures were 3 degrees above normal for January and 2 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.

Lower Snake River Basin

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<----- Drier ----- Future Conditions ----- Wetter ----->						
		90% 70%		Chance Of Exceeding *		30% 10%		30-Yr Avg.
		(1000AF)	(1000AF)	50% (Most Probable)	(% AVG.)	(1000AF)	(1000AF)	
GRANDE RONDE at Troy (1)	MAR-JUL	992	1382	1560	99	1738	2128	1580
	APR-SEP	846	1199	1360	99	1521	1874	1370
CLEARWATER at Spalding (1,2)	APR-JUL	6663	7864	8410	114	8956	10157	7350
	APR-SEP	7167	8345	8880	113	9415	10593	7850
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	11485	17891	20800	97	23709	30115	21500
	APR-SEP	12831	20030	23300	97	26570	33769	24100

LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

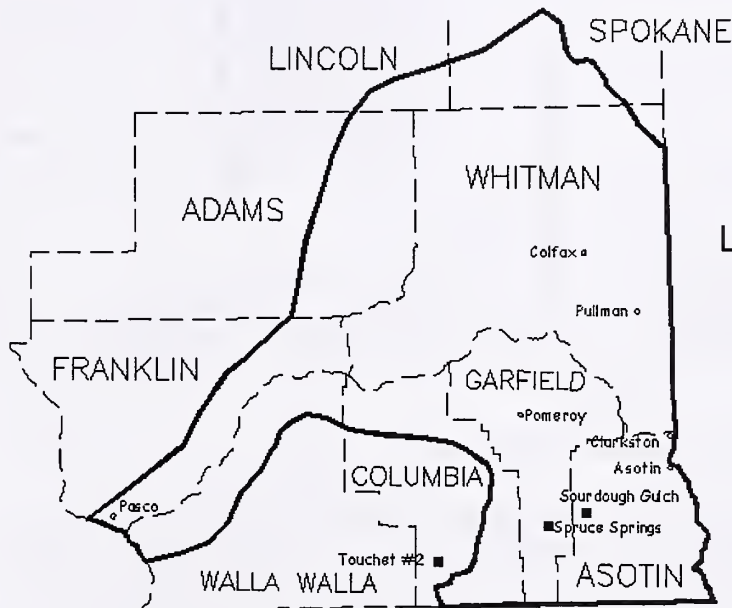
LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - February 1, 2002

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
LOWER SNAKE, GRANDE RONDE	16	186	118

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

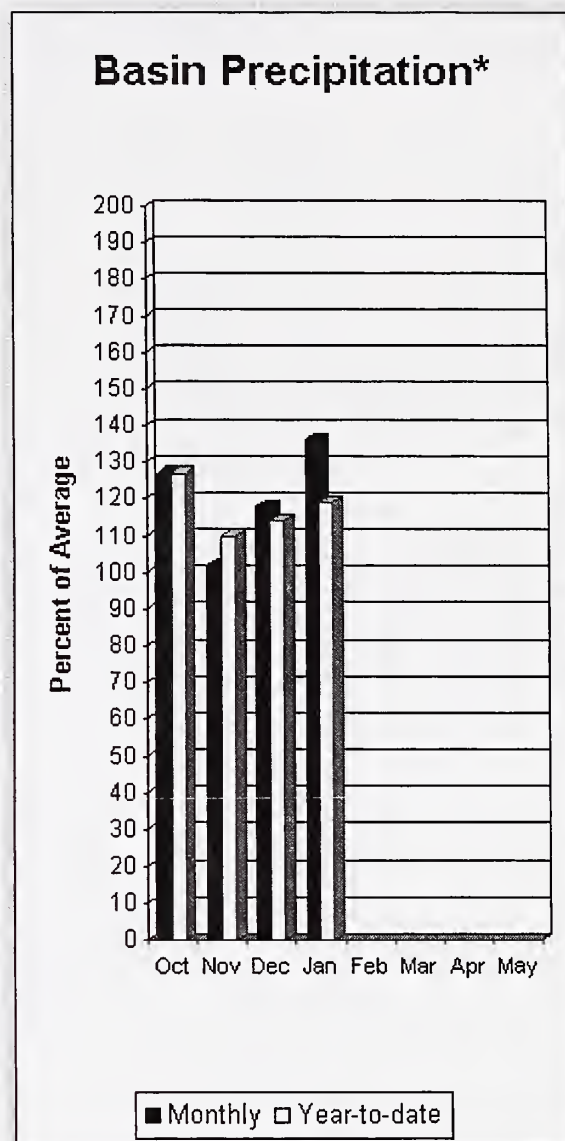
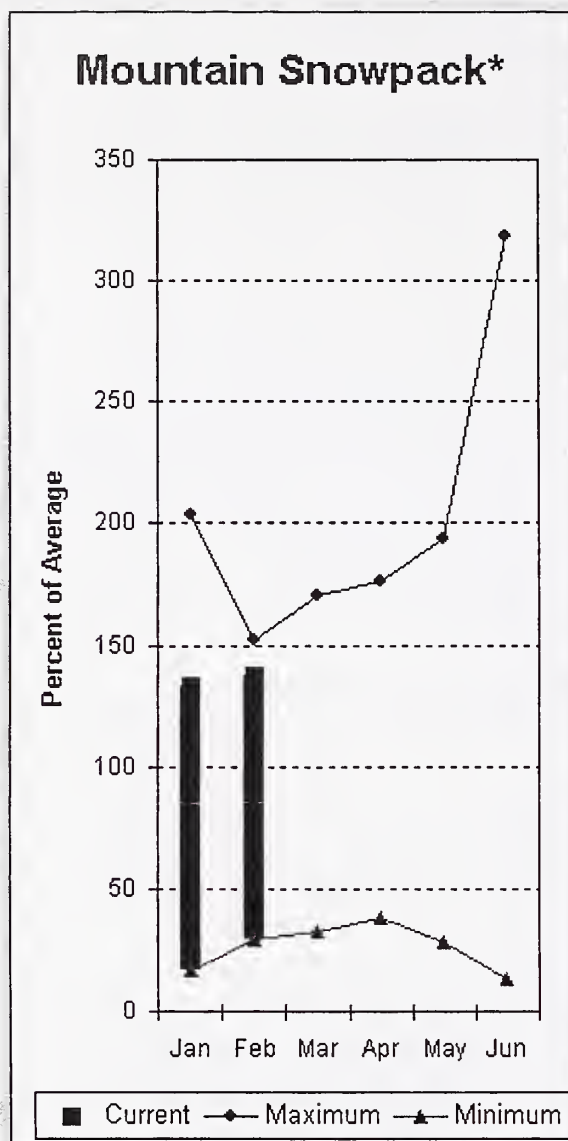
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Lower Snake River Basin
Percent of Average
February 1, 2002

Snowpack - 118%
Precipitation - 120%

Cowlitz - Lewis River Basins



*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 102% and Cowlitz River at Castle Rock, 96% of average. The Columbia at The Dalles is forecasted to have 95% of average flows this summer. January average streamflow for Cowlitz River was 122% and 119% for Lewis River. The Columbia River at the Dalles was down slightly at 85% of average. January precipitation was 136% of average and the water-year average was 119%. February 1 snow cover for Cowlitz River was 121%, and Lewis River was 153% of average. Paradise Park SNOTEL reported the most water content for the basin with 57.4 inches. Average February 1 water content is 48.1 inches. Average temperatures were 1-2 degrees above normal during January and have averaged 1 degree above throughout the water year.

For more information contact your local Natural Resources Conservation Service office.

Cowlitz - Lewis River Basins

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<<----- Drier -----		Future Conditions		----- Wetter ----->>		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
LEWIS at Ariel (2)	APR-JUL	767	941	1060	103	1179	1353	1030
	APR-SEP	897	1078	1200	102	1322	1503	1180
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	806	1457	1900	99	2343	2994	1920
	APR-JUL	571	1225	1670	99	2115	2769	1690
COWLITZ R. at Castle Rock (2)	APR-SEP	983	1904	2530	96	3156	4077	2640
	APR-JUL	1432	1889	2200	96	2511	2968	2300
Klickitat near Glenwood	APR-JUN	124	137	145	112	153	166	129
	APR-SEP	153	171	183	112	195	213	163
COLUMBIA R. at The Dalles (2)	APR-SEP	76109	86345	93300	95	100255	110491	98650
	APR-JUL	61183	72506	80200	95	87894	99217	84650

COWLITZ - LEWIS RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

COWLITZ - LEWIS RIVER BASINS Watershed Snowpack Analysis - February 1, 2002

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
LEWIS RIVER	3	237	153
COWLITZ RIVER	5	217	121

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

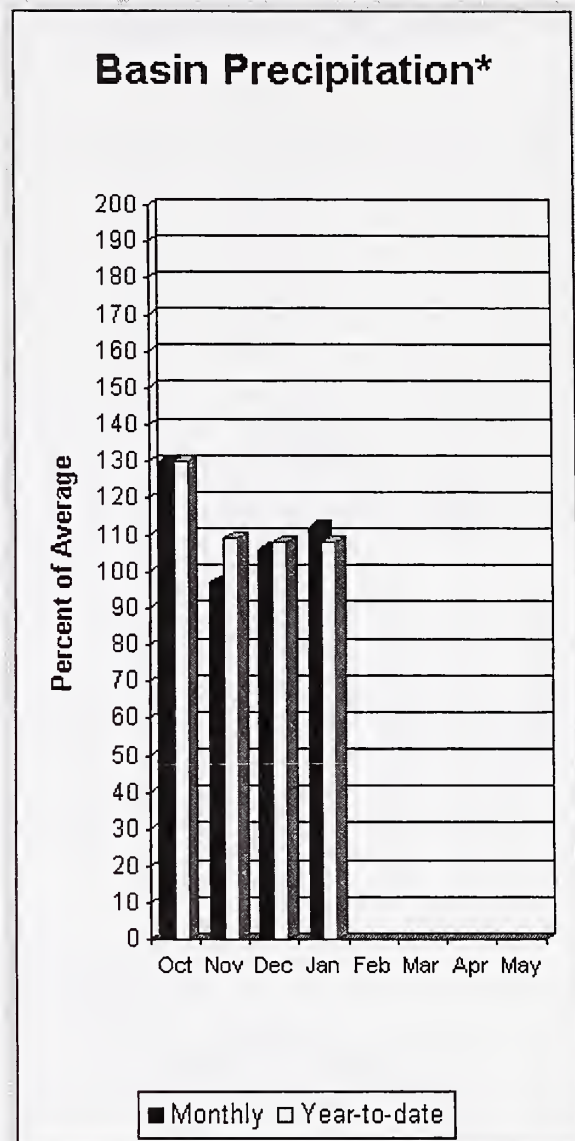
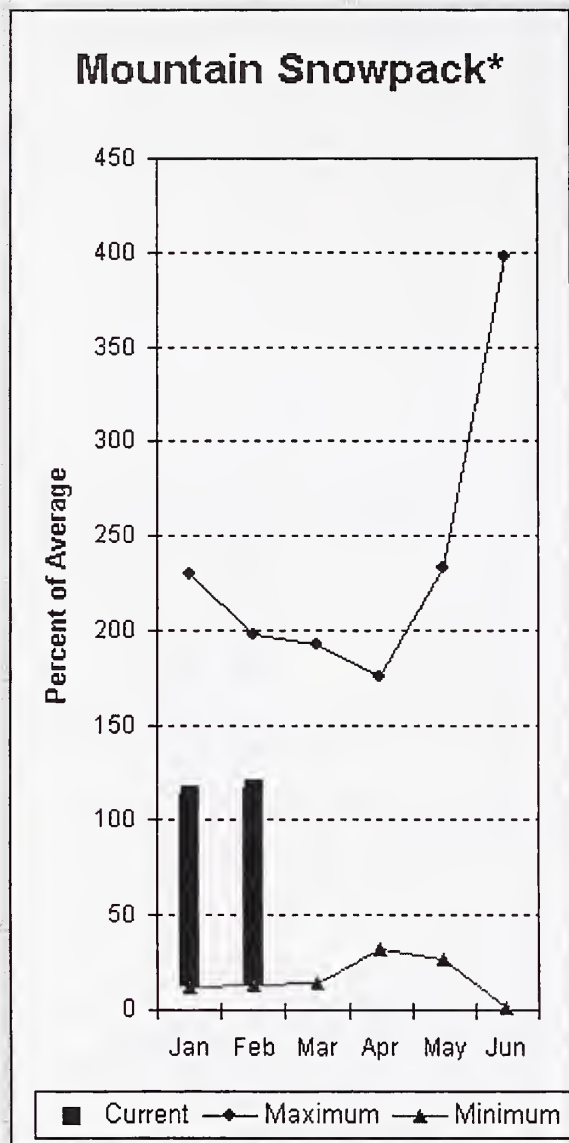
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Cowlitz-Lewis River Basins
Percent of Average
February 1, 2002

Snowpack - 137%
Precipitation - 119%

White - Green River Basins



*Based on selected stations

Summer runoff is forecast to be 104% of normal for the Green River below Howard Hanson Dam and 99% for the White River near Buckley. February 1 snowpack was 118% of average in both White River and Puyallup river basins and 114% in Green River Basin. Water content on February 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 29.7 inches. This site has a February 1 average of 22.1 inches. January precipitation was 112% of average, bringing the water year-to-date to 108% of average for the basins. Average temperatures in the area were slightly above normal last month and remain near average for the water-year.

For more information contact your local Natural Resources Conservation Service office.

White - Green - Puyallup River Basins

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<----- Drier ----->		Future Conditions		>----- Wetter ----->		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	Chance Of Exceeding * (% AVG.)	30% (1000AF)	10% (1000AF)	
WHITE near Buckley (1,2)	APR-JUL	339	406	437	99	468	535	440
	APR-SEP	415	493	529	99	565	643	535
GREEN below Howard Hanson (1,2)	APR-JUL	171	229	256	105	283	341	245
	APR-SEP	195	255	282	104	309	369	270

WHITE - GREEN - PUYALLUP RIVER BASINS Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

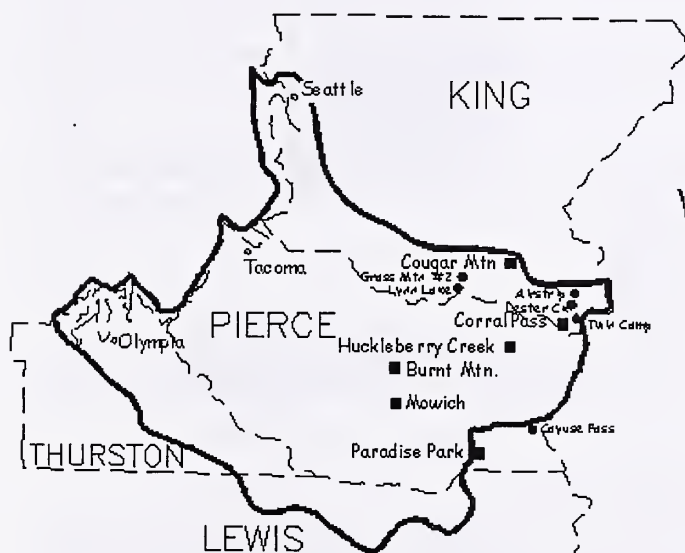
WHITE - GREEN - PUYALLUP RIVER BASINS Watershed Snowpack Analysis - February 1, 2002

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
WHITE RIVER	3	219	118
GREEN RIVER	7	248	114
PUYALLUP RIVER	3	222	118

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

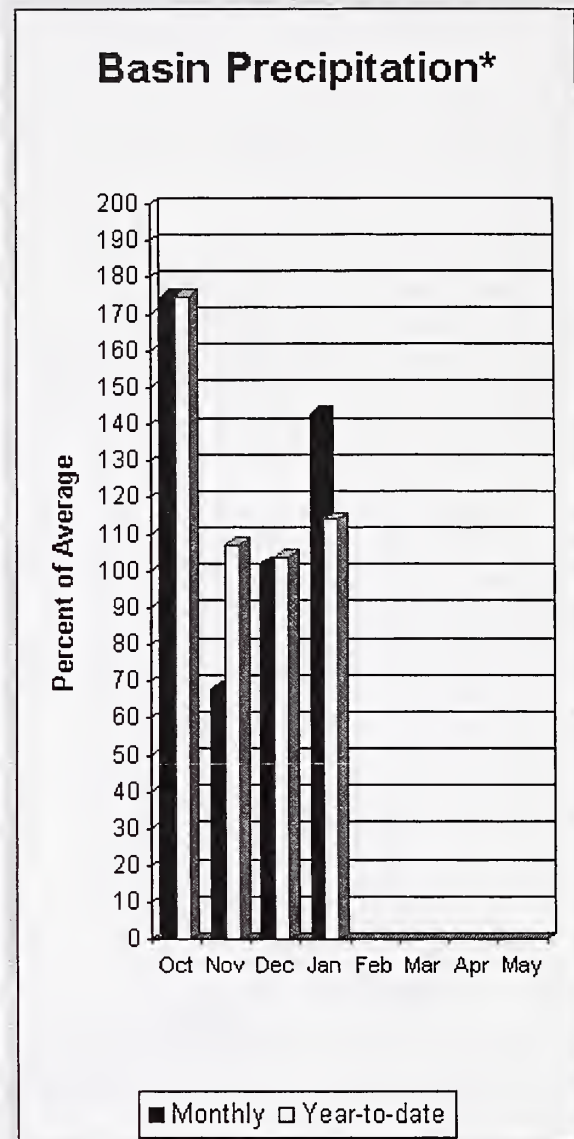
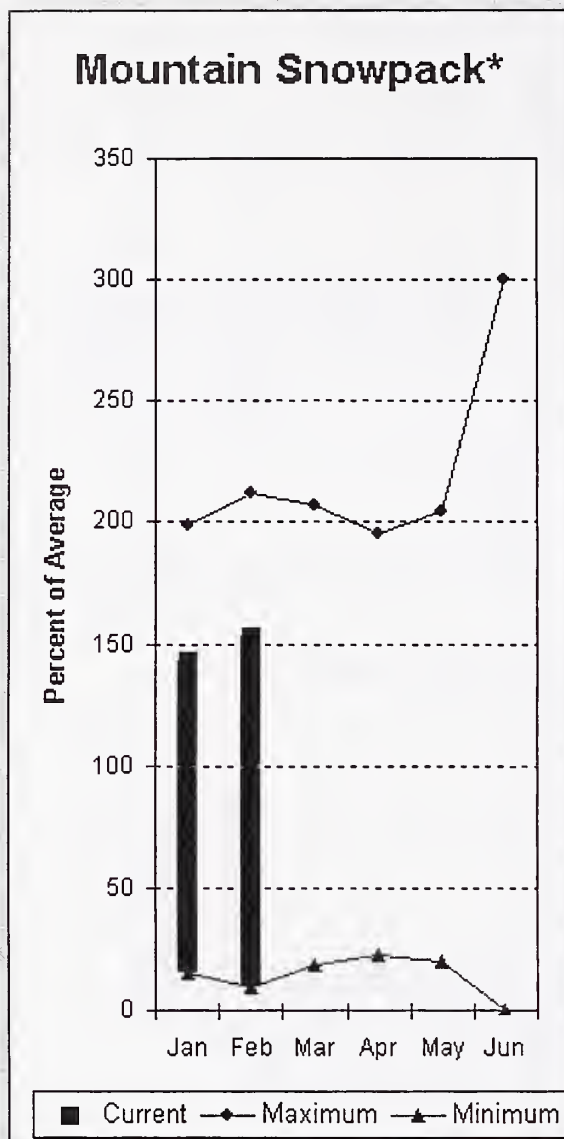
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White-Green-Puyallup Basins Percent of Average February 1, 2002

Snowpack - 117%
Precipitation - 108%

Central Puget Sound River Basins



*Based on selected stations

Forecast for spring and summer flows are: 100% for Cedar River near Cedar Falls; 111% for Rex River; 110% for South Fork of the Tolt River; and 134% for Cedar River at Cedar Falls. Basin-wide precipitation for January was 143% of average, bringing water-year-to-date to 114% of average. February 1 average snow cover in Cedar River Basin was 147%, Tolt River Basin was 187%, Snoqualmie River Basin was 140%, and Skykomish River Basin was 139%. Olallie Meadows SNOTEL site at 3960 feet, had 39.9 inches of water content. Average February 1 water content is 39.2 inches at Olallie Meadows. January temperatures were slightly above average for the past month but near normal for the water-year.

For more information contact your local Natural Resources Conservation Service office.

Central Puget Sound River Basins

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<<----- Drier -----		Future Conditions		----- Wetter ----->>		30-Yr Avg. (1000AF)
		90%	70%	Chance Of Exceeding *		30%	10%	
		(1000AF)	(1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	(1000AF)	(1000AF)	
CEDAR near Cedar Falls	APR-JUL	62	73	81	111	89	100	73
	APR-SEP	60	72	80	100	88	100	80
REX near Cedar Falls	APR-JUL	19.6	25	28	113	32	37	25
	APR-SEP	22	28	31	111	35	40	28
CEDAR RIVER at Cedar Falls	APR-JUL	69	86	98	132	109	127	74
	APR-SEP	70	86	98	134	109	126	73
SOUTH FORK TOLT near Index	APR-JUL	12.7	14.7	16.0	109	17.3	19.3	14.7
	APR-SEP	15.1	17.2	18.6	110	20	22	16.9

CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January					CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - February 1, 2002			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	4	241	147
					TOLT RIVER	1	291	203
					SNOQUALMIE RIVER	4	225	131
					SKYKOMISH RIVER	3	230	139

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

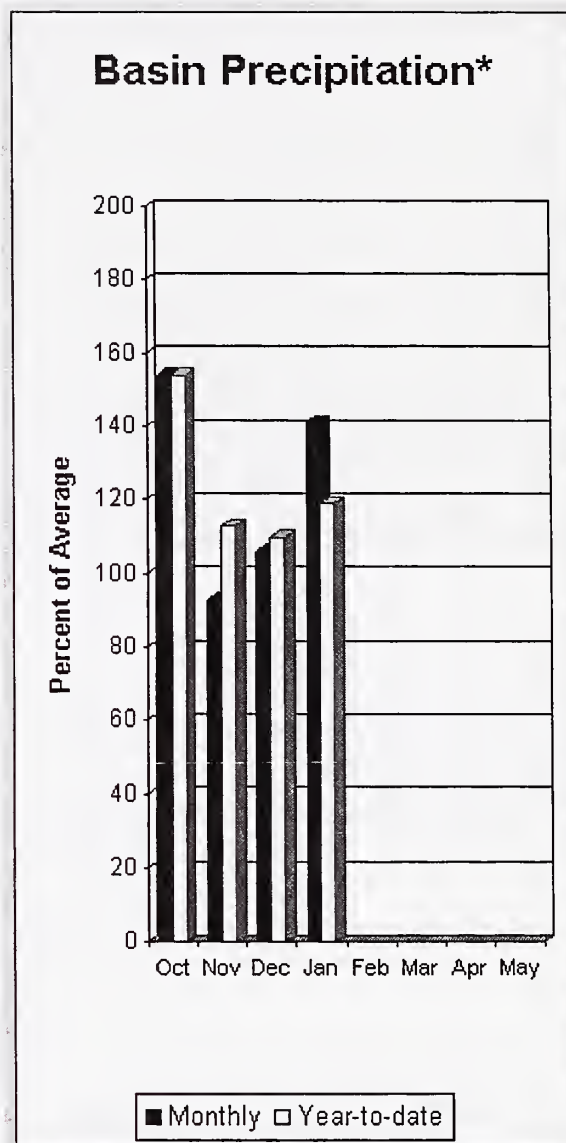
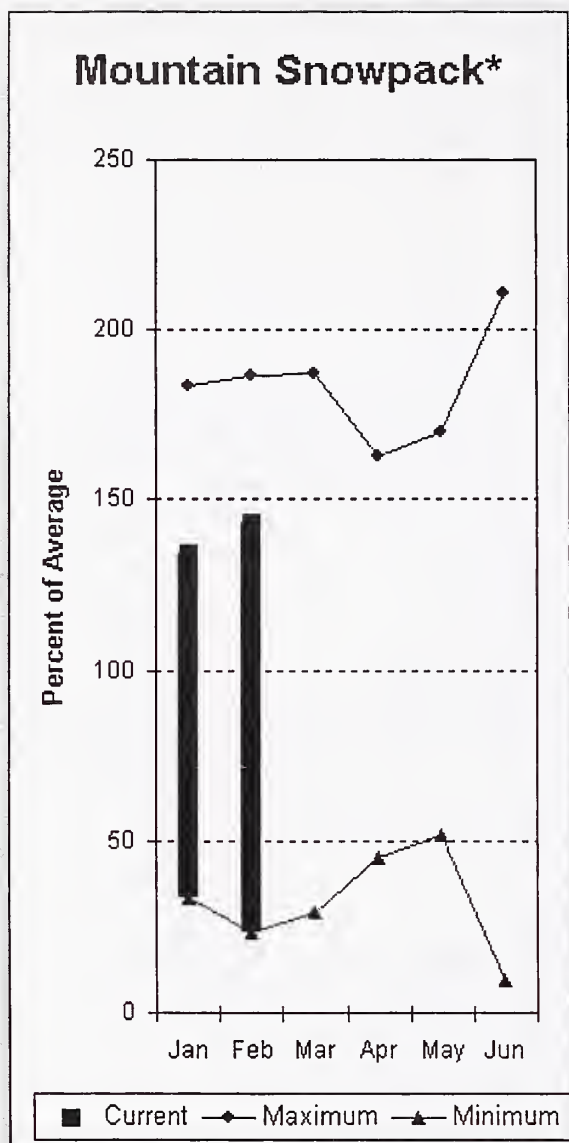
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Central Puget Sound Basins
Percent of Average
February 1, 2002

Snowpack - 153%
Precipitation - 114%



North Puget Sound River Basins



*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 104% of average for the spring and summer period. January streamflow in Skagit River was 153% of average. Other forecast points included Baker River at 111% and Thunder Creek at 101% of average. Basin-wide precipitation for January was 141% of average, bringing water-year-to-date to 119% of average. February 1 average snow cover in Skagit River Basin was 112%, Baker River Basin was 157% and Nooksack River Basin was 161%. Rainy Pass SNOTEL, at 4,780 feet, had 32 inches of water content. Average February 1 water content is 30.2 inches at Rainy Pass. February 1 Skagit River reservoir storage was 104% of average and 74% of capacity. Average January temperatures were near normal for the basin and remain slightly above average for the water year.

For more information contact your local Natural Resources Conservation Service office.

North Puget Sound River Basins

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<<===== Drier =====>>		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
THUNDER CREEK near Newhalem	APR-JUL	215	230	240	102	250	265	235
	APR-SEP	308	326	338	101	350	368	335
SKAGIT at Newhalem (2)	APR-JUL	1623	1760	1854	100	1948	2085	1860
	APR-SEP	2062	2204	2300	104	2396	2538	2220
BAKER RIVER near Concrete	APR-JUL	796	870	921	111	972	1046	830
	APR-SEP	1016	1107	1169	111	1231	1322	1050

NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January					NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - February 1, 2002		
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg	Watershed	Number of Data Sites	This Year as % of Last Yr Average
ROSS	1404.1	1021.9	872.7	978.3	SKAGIT RIVER	12	247 112
DIABLO RESERVOIR	90.6	86.8	87.0	85.5	BAKER RIVER	4	329 157
GORGE RESERVOIR	9.8	7.4	7.8	7.9	NOOKSACK RIVER	1	226 161

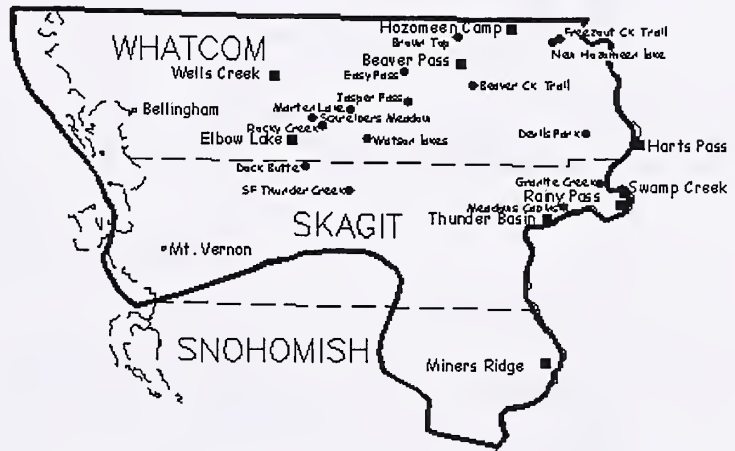
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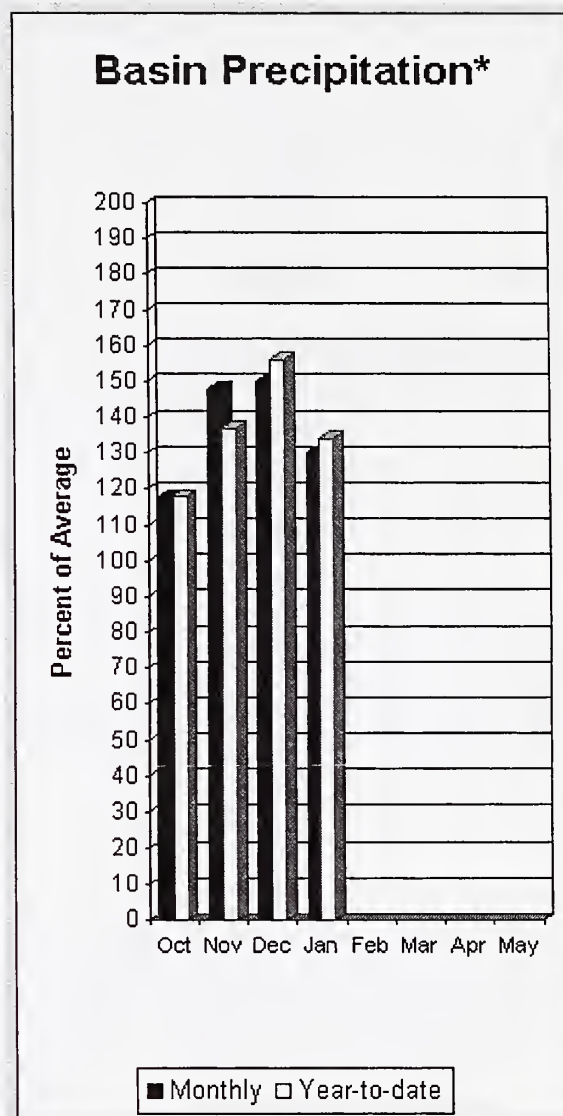
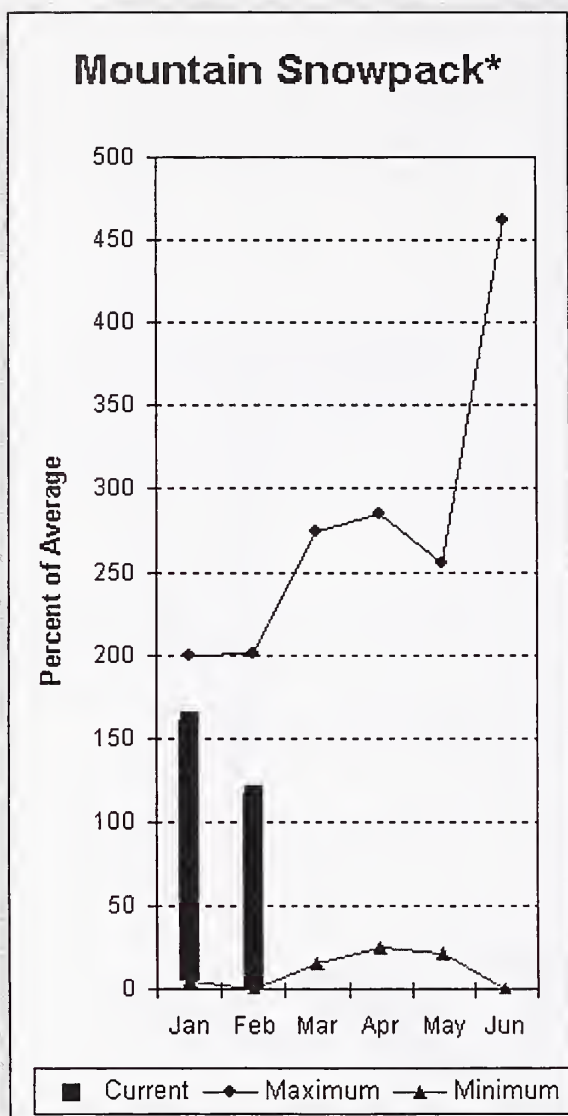
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North Puget Sound Basins
Percent of Average
February 1, 2002

Snowpack - 143%
Precipitation - 119%
Reservoir Capacity - 104%



Olympic Peninsula River Basins



*Based on selected stations

Forecasted average runoff for streamflow in the Dungeness River and Elwha River basins is 109% and 107% respectively. Big Quilcene and Wynoochee rivers should expect near average runoff this summer also. January precipitation was 130% of average. Precipitation has accumulated at 134% of average for the water year. January precipitation at Quillayute WSO was 16.46 inches. The thirty-year average for January is 13.65 inches. Olympic Peninsula snowpack averaged 116% of normal on February 1. Temperatures were slightly below average for the month and near average for the water year.

For more information contact your local Natural Resources Conservation Service office.

Olympic Peninsula River Basins

Streamflow Forecasts - February 1, 2002

Forecast Point	Forecast Period	<<===== Drier =====>>		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
DUNGENESS near Sequim	APR-SEP	149	159	166	109	173	183	152
	APR-JUL	122	130	135	109	140	148	124
ELWHA near Port Angeles	APR-SEP	473	513	540	107	567	607	505
	APR-JUL	397	428	449	107	470	501	420

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of January					OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - February 1, 2002			
Reservoir	Usable Capacity	*** Usable Storage This Year	Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	% of Average
					OLYMPIC PENINSULA	4	236	116
					ELWHA RIVER	1	824	120
					MORSE CREEK	1	267	115
					DUNGENESS RIVER	1	207	115
					QUILCENE RIVER	1	161	115
					WYNOOCHEE RIVER	0	0	0

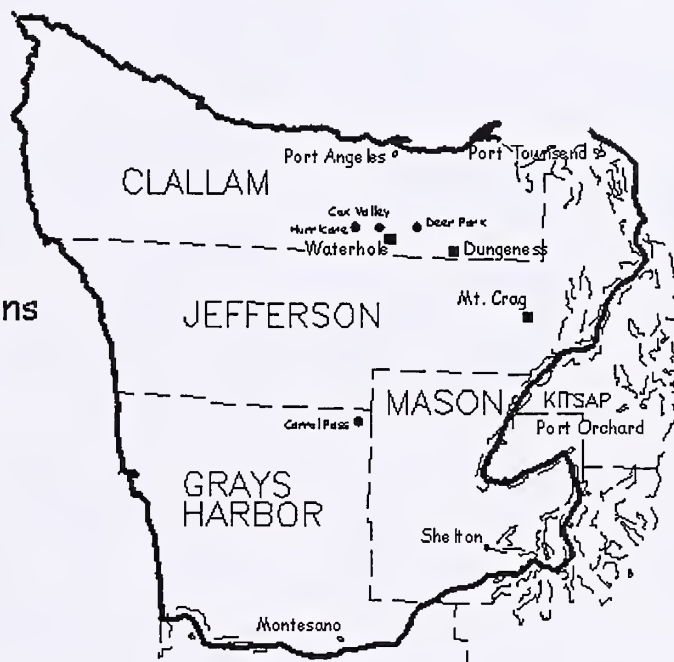
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Olympic Peninsula River Basins
 Percent of Average
 February 1, 2002

Snowpack - 116%
 Precipitation - 134%



Issued by

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Chief
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Released by

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Spokane, Washington

The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

Canada	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
State	Washington State Department of Ecology Washington State Department of Natural Resources
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County
Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



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